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Catawba County
Strategic Plan for Emergency Services

INTRODUCTION

In November 1998 the Board of County Commissioners, recognizing that Catawba County had undergone tremendous growth over the past 25 years, believed it was time to make an assessment of the needs of the County with regards to the fire, rescue and emergency medical services provided its citizens. Subsequently, the following goal was established for FY 1999-2000 with regards to the County's system of emergency services:

> **"In cooperation with the Rescue Association and the County's fire districts and departments, develop a long-range, Countywide strategic plan which ensures the best use of taxpayer money for fire, rescue and emergency medical services."**

In August 1999, FreemanWhite, Inc of Charlotte was retained by the County to develop this plan. The study effort was to be conducted in cooperation with the County and the Study Steering Committee, made up of emergency service agency representatives from fire, rescue, EMS, communications and emergency management. The specific plan objectives were identified as follows:

1. **Assess the challenges and needs facing the County's Fire, Rescue and EMS services today and for the next ten years.**

2. **Identify the resources necessary to meet those needs.**

3. **Recommend how best to provide these services.**

Methodology
The information gathered for this report came from numerous sources. These included almost 100 personal interviews, site visits to each of the 17 fire department facilities, seven rescue facilities and six EMS base locations, ride-a-longs, association meetings, fire board meetings and numerous informal conversations with citizens encountered along the way.

The interviews conducted were with County elected officials, senior management personnel, emergency service agency employees and supervisors, as well as numerous volunteers from throughout the County. Information was solicited from regulatory and state agency personnel from the Office of State Fire Marshal and the Institute of Government, as well as senior representatives from at least a dozen jurisdictions outside the County and state regarding the current issues faced by emergency service providers today.

Data was collected and studied from numerous sources as well. These included information provided by the various departments and squads themselves, the County's Annual Budget Reports, GIS maps of the County, individual fire, rescue and EMS district

boundary maps, call reports, situation analysis reports and, with the cooperation of the Communications Center, response time records of the various service providers.

Report Organization
As with any strategic planning process, in order to determine where you need to go and how you will get there you must begin with an assessment of where you *are*. This plan is organized accordingly.

> Section 1. Current Conditions
> Section 2. Challenges
> Section 3. A Plan for 2010
> Section 4. Implementation & Funding

A listing of the numerous Tables and Diagrams illustrated throughout the report are provided in the Appendix together with supplementary materials referenced and/or relevant to the recommendations.

History
As a means of introduction to this report, and more significantly to *Section 1, "Current Conditions",* the following references are provided for historical context and are excerpted from North Carolina Statutes and the Catawba County Code of Ordinances. *Expanded General Statute and Ordinance references are provided in the Appendix.*

Fire Districts
In accordance with G.S. 153A-233, Catawba County entered into agreements with incorporated rural volunteer and municipal fire departments to provide rural fire protection in 1977. These departments today serve the following 19 tax-supported districts: Bandys, Catawba Rural, Claremont Rural, Conover Rural, Cooksville, Denver Rural, Fairbrook, Icard/Mountainview, Icard/Longview, Longview Rural, Maiden Rural, Mountainview, Newton Rural, Oxford, Propst Crossroads, St. Stephens, Sherrills Ford-Terrell, Startown and Viewmont.

Rescue Squads
County Ordinance 311.070 General Provisions states: "There are six volunteer rescue squads within the county. The rescue squads within the County shall be considered backup to the county emergency medical services (EMS). They shall be dispatched when all county units are on calls or when the response time for a county unit may be too long for the best interest of the sick and injured. Rescue squads shall be dispatched to assist with wrecks where there are persons trapped."

On February 6, 1978, in policy adopted by the Board of County Commissioners, individual contracts were entered into with the five (at that time) rescue squads which were executed on December 16, 1980, retroactive to July 1, 1980, and updated September 7, 1987. A sixth contract was signed with Sherrills Ford Rescue Squad on September 8, 1987. The (now) six rescue squads are Newton-Conover, Hickory, Catawba, Claremont, Maiden and Sherrills Ford.

Emergency Medical Services
Catawba County Emergency Medical Services was identified as the primary EMS provider under policies adopted by the Board of Commissioners February 3, 1978; reference County Ordinance Chapter 311.085 (C), (1). Response to medical

emergencies, life sustaining care, pre-hospital emergency treatment/maintenance and safe and expedient transportation via ambulance are the primary functions provided from the following base locations: Catawba, Hickory, Newton, Propst, Sherrills Ford and St. Stephens.

First Responder Program
Chapter 311.085 of the County Code of Ordinances addresses the following as regards to the First Responder Program:

(A) *First Responder Defined.* An organization with personnel trained in emergency medical care that is dispatched to the scene of a medical emergency for the primary purpose of providing emergency medical assistance to a patient until the ambulance and additional medical aid arrive.
(B) *Purpose.* The purpose of the first responder units is to ensure that a person trained in basic life support will be at the scene of an emergency and render aid to victims in a matter of a few minutes until an Emergency Medical Services (EMS) unit can arrive.
(C) Procedures for Dispatching First Response Personnel to the Scene of Life-Threatening Emergency Situations.
   (1) Catawba County Emergency Medical Services will be the primary EMS provider under policies adopted by the Board of County Commissioners.
   (2) The six rescue squads (Hickory, Newton-Conover, Claremont, Catawba, Maiden, and Sherrills Ford) will be the primary backup to the Catawba County EMS for the transportation of the sick and injured.
   (3) First response personnel will be utilized in the event a life-threatening situation is believed to exist.

Emergency Services Department
The Emergency Services Department is responsible for the coordination and supervision of emergency management and emergency related services in Catawba County. Sub-chapter sections 311.001 – 311.010 of the Catawba County Code of Ordinances, (variations dating from as early as 1961), address the intent and purpose of the Department as follows:

311.003 INTENT AND PURPOSE (Adopted August 2, 1993)
(A) It is the intent and purpose of this subchapter to establish an office that will ensure the complete and efficient utilization of all of the County's resources to combat disaster resulting from enemy actions or other such disasters as defined herein.

(B) The County Office of Emergency Management will be the coordinating agency for all activity in connection with emergency management. It will be the instrument through which the County Board of Commissioners may exercise the authority and discharge the responsibilities vested in them during disaster emergencies.

Communications
The Catawba County Communications Center is operated as a function of the Sheriff's Department. Its purpose is to provide centralized emergency communications for the citizens of the County by placing them in touch with and/or dispatching the appropriate public safety service agency; i.e., fire, rescue, EMS, and law enforcement. Subsections 310.65 and 310.66 of the County Code of Ordinances address the relevant issues regarding the 911 Emergency Telephone Numbering System.

1. CURRENT CONDITIONS

This section addresses current conditions of the major service providers: Fire, Rescue, EMS, the Communications Center and the Emergency Services Department. The subsections are designated as:

> **1.1 Services**
> **1.2 Performance**
> **1.3 Funding History**

1.1. Services

1.1.1. Fire

Currently, Catawba County is served by 17 fire departments (Figure F-1, *Existing Fire Districts*) that provide services to 19 fire tax districts. Fire tax districts were established by the County and authorized by legislation in the 1970's as a means of assessing taxes equitably, based on property values, to pay for fire services. The services at that time, which tax revenues funded, consisted primarily of equipment and vehicles, since the majority of firefighters in the County were volunteers.

Figure F-1

Existing Fire Districts

The 19 tax districts remain today as they were originally established. The reason there are only 17 fire department districts is that the areas originally designated Fairbrook and Viewmont (although still taxed separately) now are served by the Hickory Fire Department. Also, the tax districts originally designated as Icard I and Icard II (although also still taxed separately) are now served by the Icard Fire Department.

Two areas of the County are actually served, via contract, by fire departments of neighboring counties. The Icard Fire Department is actually in Burke County to the west and serves the area known as Icard I (Longview) and Icard II (Mountain View) from its station on SR 70 approximately 2 miles west of the Catawba County line.

Denver is the second district served by another county. The Denver station is located approximately a mile south of the Catawba County line in Lincoln County. It services a small area in the southeast corner of the County, proximate to the Highway 16 and Highway 150 interchange, and adjacent to the County fire districts of Bandys and Sherrills Ford.

The fire department district lines exist today, for the most part, as they were created almost 24 years ago. Growth and development since that time along the I-40 corridor, in the southeast and south at Sherrills Ford and Maiden respectively, and to the north and northeast of Hickory have changed the complexion of these areas as well as the level of needs and services. For the most part Cooksville, Propst, Bandys, Oxford and portions of Sherrills Ford and Catawba fire districts remain predominately rural; this too is expected to change in the near future.

Currently Hickory, Longview, Newton and Conover have paid personnel on duty 24 hours per day and are supported in their fire service efforts by volunteers. Icard, Mountain View, St. Stephens, Oxford, Claremont, Maiden, Denver and Sherrills Ford have at least one paid person, either Chief, Engineer or Driver on staff during daytime business hours. These departments rely heavily on volunteers to fulfill their fire service responsibilities. Cooksville, Propst, Bandys and Catawba are the only remaining all volunteer departments in the County.

The facilities that house the 17 Fire Departments vary considerably. For example, the cities of Conover and Claremont have built new and modern facilities within the past three years to house the needs of their departments. The city of Hickory currently maintains six stations throughout its area of jurisdiction. Although Newton and Maiden are municipal facilities, both are in generally poor condition as regards to the amount of space, physical conditions and functional requirements.

Although the majority of the predominately volunteer departments are in facilities that are older, and typically either of pre-manufactured metal or basic concrete block construction, they are typically very well maintained and utilized.

The condition of the department vehicles observed, appeared to be quite good. Most departments have a variety of vehicles ranging from pumpers to smaller brush trucks and equipment trucks. While a number of the vehicles date to the mid 1970's, and in one case 1969, all departments, except for Startown, have pumper/tanker trucks that are less than ten years old, most less than six.

During FY 1999, the 17 fire departments received a total of 4,285 calls for service.

1.1.2. Rescue

Six Rescue Squads currently serve Catawba County (Figure R-1, *Existing Rescue Districts*). These six districts cover land areas much larger than the 17 fire departments. In most cases, each Rescue District will encompass portions of two or three fire districts, or in the case of Hickory Rescue, as many as seven fire districts. While the current

boundaries for Claremont, Catawba, Newton-Conover, Maiden and Sherrills Ford are comparatively equal in land area, Hickory Rescue's area of responsibility extends to approximately 40% of the entire land area of the County. As well, it includes the most densely populated area of the County. Subsequently, Hickory Rescue is the only squad with two base locations, one in Hickory and one southwest of Propst Crossroads.

Figure R- 1

Existing Rescue Districts

Current district boundaries coincide little if at all with current fire districts. The boundaries are identified in the County Code of Ordinances and may be adjusted by the Board of County Commissioners at any time.

The Rescue concept, as described by County Ordinance, was developed to provide and deploy personnel, trained in basic life support, to an accident scene very quickly to assist and render aid to victims until emergency medical personnel and an ambulance or transport vehicle arrives. The six Rescue Squads are designated as the primary backup to the County EMS department for the transportation of the sick and injured.

In addition to accident response and basic first aid, a number of personnel have received specialized training and are qualified to assist in areas of rescue that encompass specialized situations such as trench rescue, swift water rescue, collapsed building rescue, high angle (rope) rescue and the like.

The Board of County Commissioners entered into contracts with Hickory, Newton-Conover, Claremont, Catawba and Maiden Rescue squads in 1980 and with Sherrills Ford in 1987. At that time, funding of operations was provided by United Way and funding for capital equipment by the County. Beginning in 1991, the County assumed responsibility for all funding. Until this year, volunteers have provided all rescue

services. This fiscal year (FY 2000-2001), a paid position was authorized for assignment to the Hickory Rescue Squad.

For the most part, the facilities utilized by the Rescue squads are owned, leased or provided by municipal or community organizations. Rescue and community volunteers, with donations and money raised by the squad members, built the second Hickory base. The Claremont base is currently undergoing a major expansion. The general condition of the facilities is good with the exception of Newton-Conover, which is very poor. Sherrills Ford Rescue has combined with the Sherrills Ford Fire Department, under a single Chief, and utilizes shared facilities.

All Rescue Squads appeared adequately equipped with regards to vehicles.   Each maintains at least a crash truck and an ambulance, with several bases having additional special purpose vehicles and/or boats, etc.

During FY 1999, the six Rescue Squads received a combined total of 2,479 calls for service.

1.1.3. Emergency Medical Services (EMS)
Emergency medical services in Catawba County are a function of County Government. Responding personnel are certified paramedics employed as full-time County employees. A professional manager oversees the day-to-day operations of EMS and reports to the County's Director of Emergency Services.

Figure E- 1

Existing EMS Districts

There are currently six EMS bases located throughout the County (Figure E-1, *Existing EMS Districts)*. The base or district designations are Hickory, St. Stephens, Propst, Newton, Catawba, and Sherrills Ford.

EMS district boundaries coincide with neither the existing Fire nor the existing Rescue district boundaries. These boundaries also are identified in the County Code of Ordinances and may be adjusted by the Board of County Commissioners at any time.

The condition of the base facilities is generally fair to good at best, with the exception of Newton, which is poor. The Propst base, which is fairly new, is in very good condition and very functional. The Catawba base is in a building shared with Catawba Rescue.

As noted in Table E-4, in Section 2, Challenges, The EMS vehicle inventory currently includes 22 vehicles. As of this report, five (5) had over 200,000 miles, five (5) had over 150,000 miles and four (4) had over 100,000 miles. While the "Freightliners" are custom-built, heavy-duty vehicles intended for extended use (w/proper maintenance), four (4) of the Ford trucks are 8-10 years old and have more than 200,000 miles. Conversely, there are two (2) Ford, F450 trucks with less than 5,000 miles that are listed as "spare" that would be more appropriate as in-service vehicles.

During 1999, EMS received 13,303 calls for service.

1.1.4. Communications Center

Emergency communications (911) and administrative emergency service dispatch functions for all major emergency and public safety functions are centralized in the County's Communications Center.

Dispatchers ("telecommunicators") occupy consoles and respond to calls in the Communications Center 24 hours per day. They include full-time, permanent employees of the Sheriff's Department as well as part-time, hourly employees.

An Emergency Medical Dispatch (EMD) program was implemented this past spring which essentially has changed the previously long-standing radio code and call signals utilized by the various services. The system requires additional training of dispatchers and a structured protocol of questions that are to be asked of callers to 911 with medical emergencies. The objective of the program is to assess the situation over the phone as accurately as possible and provide responding emergency personnel with as much information as possible as to the condition of the victim(s) prior their arrival on scene.

The Communications Center is located in the Justice Center Building on the County Government campus in Newton. It is crowded and has outgrown its originally assigned space. The Center Supervisor and Secretary are not only located remote from the Center itself but also from one another. Further, the location within the building is poor in that it permits (actually requires) internal circulation through its actual communications area by facility personnel, which breaches appropriate security as well as disrupts the dispatchers addressing emergencies.

During 1999, the Communications Center received 103,402 calls for service, including all emergency/911 and administrative/dispatch requests.

1.1.5. Emergency Services Department

The Emergency Services Department is a function of County government. It is managed by a full-time Director who, with various support staff, is responsible for supervision of the following: Emergency Management (including the Emergency Operations Center),

Emergency Medical Services, the Fire Marshal's Office, Animal Control (including the Animal Shelter) and Veterans' Services.

The Emergency Services Director serves as the County's liaison to all emergency service agencies in the County.

The department's primary administrative offices are located in the lower level of the Government Center Building on the County Government campus in Newton. The EMS Manager and support staff are currently co-located with the Newton EMS base at the old Agricultural Center. Current administrative offices are very crowded. The Fire Marshal's investigative staff does not have necessary privacy. Bulk material storage is remotely located. The Emergency Operations Center (EOC), located across the campus within the Justice Center, is very crowded and functions poorly when activated. EMS offices are not only remote and inconvenient to management but also are very poor with regard to space, work environment and building conditions.

Vehicles not otherwise assigned to EMS need to be under cover from the elements. Between 12 and 14 vehicles and major pieces of equipment need adequate parking/storage facilities. These include the 30 KW and 60 KW generators, the fire training and testing trailer, the Mobile Operations Center, Emergency Support vehicle, Hazmet trailer, etc.

1.2. Performance

The Tables that follow provide details, by year and activity type, of documented performance for the services described. The primary circumstances addressed for Fire, Rescue and EMS include calls received, situations found and response times.

1.2.1. Fire

Table F-1, Fire *Calls Per Year*, identifies the experienced call volume for all fire departments over the past five years. Although a slight spike in the number of calls received was experienced during FY 95/96, the total number of calls received has steadily increased from 3,569 during FY 94/95 to 4,285 in FY 98/99, an increase of slightly more than 20%.

Table F-1
Fire Calls Per Year

Department	Fiscal Year					5 Yr. Total	Avg./Yr.	Average Per Day
	94/95	95/96	96/97	97/98	98/99			
Bandys	95	110	90	110	114	519	103.8	0.28
Catawba	82	122	93	130	126	553	110.6	0.30
Claremont	150	173	157	159	193	832	166.4	0.46
Conover	296	346	327	292	340	1,601	320.2	0.88
Cooksville	40	54	40	45	49	228	45.6	0.12
Denver	43	39	44	52	65	243	48.6	0.13
Hickory	1,598	1,717	1,700	1,661	1,773	8,449	1,689.8	4.63
Icard	27	15	9	12	18	81	16.2	0.04
Longview	124	165	129	190	165	773	154.6	0.42
Maiden	156	207	160	170	206	899	179.8	0.49
Mountain View	135	210	155	139	167	806	161.2	0.44
Newton	349	466	358	414	477	2,064	412.8	1.13

Department	Fiscal Year					5 Yr. Total	Avg./Yr.	Average Per Day
	94/95	95/96	96/97	97/98	98/99			
Oxford	84	90	102	107	126	509	101.8	0.28
Propst	100	107	119	97	110	533	106.6	0.29
St. Stephens	180	224	210	180	228	1,022	204.4	0.56
Sherrills Ford	62	88	81	83	79	393	78.6	0.22
Startown	48	65	40	38	49	240	48.0	0.13
Total Calls	**3,569**	**4,198**	**3,814**	**3,879**	**4,285**	**19,745**	**3,949.0**	**10.82**
Avg. No. Calls/Day	**9.8**	**11.5**	**10.4**	**10.6**	**11.7**			

Hickory far exceeds all other departments with 42.8% of the calls received. Newton and Conover are a distant second and third with 10.5% and 8.1%, respectively. A number of departments were grouped at between 3.9% and 5.2% of all calls received. These included Claremont, Longview, Mountain View, Maiden and St. Stephens.

The lowest call averages were Icard at 16.2 calls per year or .4%, followed by Cooksville, Startown and Denver at 1.2% each or approximately 45 to 48 calls per year.

Table F-2, *Situation Found Analysis-Fire*, describes the situation found once the calls received were responded to. Of the total calls received over the past five years, the most frequent "situation found", 3,438 times or 23.6% of the time, was "Hazardous Conditions." The most commonly thought of situations, i.e., structure fire, vehicle fire, and brush/woods fire reflected 11%, 7%, and 15% respectively, of all situations found.

Table F-2

Situation Found Analysis - Fire

Situation	Fiscal Year					5 Yr. Total	Avg./Yr.
	94/95	95/96	96/97	97/98	98/99		
Structure Fire	320	367	316	347	307	1,657	331
Vehicle Fire	233	208	194	200	212	1,047	209
Brush/Woods Trash	539	531	383	344	337	2,134	427
False Alarm-Malfunction	435	536	468	480	581	2,500	500
False Alarm-Malicious	35	34	35	35	47	186	37
False Alarm-Unintentional	262	328	474	537	544	2,145	429
Good Intent Calls	402	476	399	390	436	2,103	421
Hazardous Conditions	623	795	641	661	718	3,438	688
Rescue/EMS Assist	54	60	90	104	130	438	88
Service Calls/Assist	322	547	489	484	438	2,280	456
Mutual Aid					201	201	40
Other	225	262	277	233	251	1,248	250
Totals	**3,450**	**4,144**	**3,766**	**3,815**	**4,202**	**14,539**	**2,908**

It is important to note that of the 14,539 calls received over the past five years, 4,831 or 33.2%, were false alarms. Of significance is that 52%, or 2,500, of those false alarms were determined to be due to mechanical malfunction of the alarm system. Over the past five years, false alarms have averaged over 960 calls per year.

Table F-3, *Response Time-Fire*, reflects average response times recorded for each individual fire department having jurisdiction within Catawba County. Although a prominent indicator of performance, response time standards are difficult to specify and

uniformly apply for a number of reasons. Distance, area geography, development density and availability of personnel (as discussed in Section 2) all contribute to response time. However, accuracy of recorded information, definitions of response time itself, standard practices for recording times; i.e., time of call received to time of dispatch, time of dispatch to time on scene, time of alarm to agent application, etc. are all or could all be significant during any given incident. Subsequently Table F-3 attempts to compare the *average* response times, based on the recorded number of calls for each Department.

Table F-3

Response Time - Fire

Department	Number of Calls	Average Response (in Minutes)
Bandys	52	7.6
Catawba	56	9.6
Claremont	83	8.4
Conover	160	5.5
Cooksville	23	7.2
Denver	25	8.2
Hickory	1,268	5.5
Icard	8	4.6
Longview	77	4.1
Maiden	89	5.4
Mountain View	81	6.0
Newton	206	4.5
Oxford	50	7.4
Propst	54	7.1
St. Stephens	102	6.1
Sherrills Ford	39	8.0
Startown	24	6.4
Total Calls/Avg. Response	**2,397**	**6.6**

Notes:

Response times are averages as recorded by the Communications Center. In the case of Icard and Denver, they are self-reported. In the case of Hickory, response times are available for each of the six fire stations; however, the response time shown is an overall average for the department.

The calls identified for each department are calculated *averages* for the time period the response times were recorded. For example, over the past five years, St. Stephens has averaged 204 calls per year. Average response times were recorded for all calls received the first six months of this year. While the exact number of calls corresponding to these response times were not available, an average number of calls for half the year was used; i.e., 204/2 = 102 calls.

1.2.2. Rescue

Table R-1, Action *Taken Analysis Report-Rescue,* for the period July 1998-June1999, reflects two separate but correspondingly important criteria. They are:

- The total of all calls taken, as recorded by each Rescue Squad, for the year, as well as
- The *type* of call responded to, i.e., medical aid, land/water search, extrication, etc.

Reports for FY 1995-1996, and FY 1997-1998, and are included in the Appendix.
A report for FY 1996-1997 was not available.

Table R-1

Action Taken Analysis Report
(7/01/98 – 6/30/99)

Call Description	Catawba	Claremont	Hickory	Maiden	Newton Conover	Sherrills Ford	Total Calls	Percent
No Code Entered	2	0	14	1	2	8	27	0.01
Assist with Patient	12	3	40	2	11	5	73	0.03
Cancelled En Route/On Scene	26	55	230	3	30	22	366	0.15
Direct Traffic	2	1	0	0	0	8	11	0.00
Dragging Operation	2	0	1	0	0	3	6	-
Driver	10	4	56	0	4	3	77	0.03
Extrication	5	5	29	0	3	1	43	0.02
Investigation	0	2	0	0	0	0	2	-
Land/Water Search	0	4	4	0	0	6	14	0.01
Lower	0	0	4	0	0	0	4	-
Forcible Entry	0	0	1	0	0	0	1	-
Medical Aid	124	217	689	51	208	82	1,371	0.55
Mutual Aid	2	6	3	3	4	3	21	-
Provide Transport Unit	12	8	42	5	9	15	91	0.04
Raise	0	0	3	0	0	0	3	-
Refused Treatment/Transport	13	15	38	2	21	15	104	0.04
Remove Hazard	0	0	1	0	0	0	1	-
Standby	36	45	63	17	36	9	206	0.08
Traffic Control	0	0	5	0	0	0	5	-
Transport	0	4	12	0	0	2	18	0.01
Unable to Locate	0	1	2	0	2	0	5	-
Assist – EMS	4	0	0	0	0	0	4	-
Assist – Service Call	0	0	5	0	0	0	5	-
Other	0	2	14	0	1	4	21	0.01
Totals/Squad	**250**	**372**	**1,256**	**84**	**331**	**186**	**2,479**	

Total calls received by all squads for FY 1998-1999 were 2,479. Slightly over half of these (1,256 or 50.7%) were calls received by Hickory Rescue alone. Following Hickory was Claremont with 372 calls (15%), Newton-Conover with 331 calls (13.4%), and Catawba with 250 calls (10.1%). Sherrills Ford and Maiden Rescue had 186 calls (7.5%) and 84 calls (3.4%), respectively.

With regard to the type of calls responded to by all squads, "medical aid" was by far the largest with 1,371 calls, or 55.3%. The category "cancelled in route" accounted for 14.8%, "standby" for 8.3%, "refused treatment/transport" for 4.2%, and "provide transport unit " for 3.7%. The remaining 19 categories combined accounted for the remaining 16.7 of all rescue calls for FY 1999-2000. On the low end were "assist with patient" at 2.95, "extrication" at 1.7% (43 calls) and "land/water search" at .6%.

Table R-2, *Response Time-Rescue*, reflects the recorded average response times, by each rescue squad to calls they were dispatched to, between August 15, 1999 and March 30, 2000. It should be noted that while Hickory Rescue had the lowest average response time, they also recorded the most calls.

Likewise, Sherills Ford Rescue recorded the highest average response time, however, they have, what could be argued, the most challenging geographic area in the County.

Table R-2

Response Time - Rescue
(8/15/30 – 3/30/00)

Rescue Squad	Number of Calls	Average Response (Minutes)
Newton-Conover	520	6.50
Hickory	1,206	6.20
Catawba	190	9.85
Claremont	337	7.35
Sherrills Ford	197	10.20
Maiden	302	9.65
Average/All	**459**	**8.29**
Average without Hickory	**309**	**8.71**

Note:

The number of calls and response times shown were taken from Communications Center computer-aided dispatch records for the period referenced.

1.1.3. EMS

Table E-1, *EMS Calls Per Year,* identifies the total and average calls per year received by each of the six EMS bases in the County. The total number of calls received in 1995 was 10,112. In 1999, that number increased to 13,303, an increase of over 31%. The average increase per year during that time was 7.2%. The average number of calls per year was 11,729.

Table E-1

EMS Calls Per Year
1995 –1999

Year	Base						Total	Average
	Catawba	Hickory	Newton	Propst	Shls Ford	St. Stpns		
1995	1,292	4,633	2,143	235	179	1,630	10,112	1,685
1996	1,358	5,191	2,221	469	356	1,700	11,295	1,883
1997	1,377	5,154	2,199	648	578	1,875	11,831	1,972
1998	1,452	5,106	2,385	662	579	1,922	12,106	2,018
1999	1,613	5,546	2,684	811	612	2,037	13,303	2,217
5 Year Total	**7,092**	**25,630**	**11,632**	**2,825**	**2,304**	**9,164**	**58,647**	
5 Year Average	**1,418**	**5,126**	**2,326**	**565**	**461**	**1,833**	**11,729**	

Most recent year call volumes are consistent with the five-year averages for each base location. Considering five-year call volume averages, Hickory again received the most with 5,126, or 43.7% of all calls. Newton followed Hickory with 2,326 calls, St. Stephens with 1,833, Catawba with 1,418, Propst with 565 and Sherrills Ford with 461.

Table E-2, *Response Times-EMS*, illustrates the average response times for each of the EMS bases for the years 1995-1999. The times vary from 7.7 minutes in Hickory to 12.2 minutes in Catawba. More significant, however, is the increase in average response times, for *all* bases, over the past five years. This is clearly reflective of the fact that recent years' growth and development, i.e., traffic and development density, have taken a progressively increasing toll on EMS efficiency.

Table E-2

Response Time - EMS

Year	Base						Total	Average
	Catawba	Hickory	Newton	Propst	Sherrills Ford	St. Stephens		
1995	9.6	6.9	7.9	8.1	6.9	7.1	47	7.75
1996	9.9	6.8	8.4	7.9	7.0	7.4	47	7.88
1997	10.6	7.2	8.6	7.7	7.3	7.7	49	8.18
1998	11.0	7.2	8.8	8.3	8.1	7.7	51	8.50
1999	12.2	7.7	8.9	9.3	9.2	8.0	55	9.20
5 Year Total	53.0	36.0	43.0	41.0	38.0	38.0	249	41.51
5 Year Average	10.7	7.2	8.5	8.2	7.7	7.6	50	8.30

1.1.4. Communications Center

Table C-1, *Call Volume-Communications Center*, illustrates the increase in call volume each year since 1995. While a decrease was experienced in 1999, **it is most significant to note that EMS, Fire and Rescue calls all increased** over the previous year. The 1999 overall decrease was due to a lower number of Sheriff and Police calls.

The increase in calls between the years 1995 and 1999 was 46.4%. The average increase in call volume per year since 1995 has been10.3%.

Table C-1

Call Volume-Communications Center

Agency/Department	1994	1995	1996	1997	1998	1999
Sheriff	29,710	33,747	40,019	51,148	59,755	49,790
Police	14,282	15,171	18,012	21,817	24,562	21,478
EMS	12,380	13,903	14,774	15,935	13,177	16,597
Rescue	4,280	4,170	4,601	3,994	4,100	5,858
Fire	3,508	3,650	4,391	3,991	3,778	4,881
Total Calls	64,160	70,641	81,797	96,885	105,372	98,604

Table C-2, *Call Rate/Hour/Year*, tracks the total calls received, every hour of the day, for the entire year. It illustrates rather profoundly and consistently that the quietest time of the day is between 5:00 a.m. and 6:00 a.m., which is followed two hours later by the most active hour of the day, 7:00 a.m. to 8:00 a.m. It is significant to note here that the

call activity the past five years has been very consistent in this regard. The ratio of increase in number of calls received between these two time periods was 258%.

Table C-2
Call Rate/Hour/Year

Hour	1995	1996	1997	1998	1999	Total	Avg./Hour
0	2,183	2,291	2,591	3,786	3,859	14,710	2,942
100	2,091	2,284	2,744	4,590	3,659	15,368	3,074
200	1,780	1,891	2,576	4,389	3,785	14,421	2,884
300	1,349	1,425	1,990	3,438	2,998	11,200	2,240
400	1,033	1,047	1,547	2,645	2,349	8,621	1,724
500	929	895	923	1,080	964	4,791	958
600	1,227	1,344	1,948	3,584	4,263	12,366	2,473
700	1,944	2,082	4,899	8,816	5,327	23,068	4,614
800	2,966	3,231	3,951	3,986	3,504	17,638	3,528
900	2,850	3,120	3,588	3,718	3,769	17,045	3,409
1000	2,762	3,159	3,676	3,635	3,665	16,897	3,379
1100	2,793	3,131	3,254	3,549	3,483	16,210	3,242
1200	2,740	3,073	3,090	3,477	3,344	15,724	3,145
1300	2,695	2,977	3,333	3,368	3,445	15,818	3,164
1400	2,770	3,091	3,493	3,524	3,637	16,515	3,303
1500	3,057	3,388	3,893	3,918	3,926	18,182	3,636
1600	3,102	3,421	3,757	3,951	3,683	17,914	3,583
1700	3,210	3,316	3,417	3,692	3,460	17,095	3,419
1800	3,132	3,237	3,686	3,808	3,655	17,518	3,504
1900	3,061	3,287	3,872	4,062	3,899	18,181	3,636
2000	3,091	3,323	3,871	4,184	3,996	18,465	3,693
2100	3,016	3,378	4,018	4,300	3,853	18,565	3,713
2200	2,986	3,412	3,925	4,186	3,721	18,230	3,646
2300	3,021	3,228	3,779	4,213	3,924	18,165	3,633
Sub-Total	59,788	65,031	77,821	93,899	86,168	(Emergency)	
TOTAL	70,641	81,797	96,885	105,372	103,402	(Emergency+Admin.)	

1.3. Funding History

The Tables that follow reflect the past five-year funding history for Fire, Rescue, EMS and Communications. Information included is based on a compilation of current and past years' County Budget documents.

1.3.1. Fire
Table F-4, *Budget History-Fire,* provides the five-year budget history for each of the 19 fire tax districts. The proposed tax rates for FY 2000-2001 ranged from 2.7 cents in Hickory/Viewmont to 7 cents in both Catawba and Claremont/Rural. The budget allocations proposed ranged from a total of $8,904 for the combined Icard district, to

$340,102 for St. Stephens. Current fiscal year (FY 2000-2001) allocations to all fire departments are $2,125,027, an increase of approximately 13% over FY 1999-2000.

Table F-4

Budget History - Fire

Fire Department	1996-97		1997-98		1998-99		1999-00		2000-01	
	Tax Rate	Budget	Tax Rate	Budget	Tax Rate	Budget	Tax Rate	Budget	Tax Rate	Budget
Bandys	0.0400	$ 107,016	0.0400	$ 115,428	0.0400	$ 126,924	0.0390	$ 126,699	0.0390	$ 156,838
Catawba	0.0700	51,303	0.0700	54,747	0.0700	55,202	0.0700	75,474	0.0700	79,646
Claremont Rural	0.0700	80,887	0.0700	97,592	0.0700	180,180	0.0700	151,940	0.0700	203,223
Conover Rural	0.0350	25,100	0.0350	24,048	0.0350	27,600	0.0350	43,077	0.0350	29,130
Cooksville	0.0600	34,848	0.0600	34,848	0.0600	39,468	0.0600	51,882	0.0600	54,252
Denver	0.0300	39,300	0.0300	39,300	0.0400	56,212	0.0320	57,898	0.0320	86,895
Hickory (Fairbrook)	0.0550	239,771	0.0550	84,253	0.0400	60,965	0.0280	87,840	0.0280	87,609
Hickory (Viewmont)	0.0325	68,783	0.0350	46,218	0.0325	33,817	0.0270	36,140	0.0270	31,020
Icard (Longview)	0.0500	5,350	0.0500	6,450	0.0500	6,450	0.0440	7,031	0.0440	6,640
Icard (Mt. View)	0.0500	1,112	0.0500	1,112	0.0500	1,730	0.0400	1,995	0.0400	2,264
Long View	0.0800	32,776	0.0760	20,200	0.0760	19,220	0.0620	19,468	0.0620	21,960
Maiden (Rural)	0.0350	41,024	0.0350	43,821	0.0425	52,776	0.0340	59,935	0.0340	65,351
Mountain View	0.0475	143,955	0.0475	145,243	0.0475	146,797	0.0410	176,292	0.0450	206,830
Newton (Rural)	0.0500	65,300	0.0500	68,275	0.0500	87,600	0.0500	126,234	0.0600	129,864
Oxford	0.0500	81,670	0.0600	106,302	0.0600	109,398	0.0600	163,974	0.0600	184,968
Propst	0.0650	84,278	0.0650	86,212	0.0650	121,553	0.0650	141,421	0.0650	145,963
Sherrills Ford	0.0420	143,102	0.0420	151,930	0.0420	155,240	0.0320	171,345	0.0400	228,812
Startown	0.0500	65,060	0.0500	64,018	0.0500	42,850	0.0500	62,250	0.0500	63,660
St. Stephens	0.0500	344,742	0.0500	209,370	0.0500	259,364	0.0500	323,368	0.0500	340,102
Totals		**$1,655,377**		**$1,399,367**		**$1,583,346**		**$1,884,263**		**$ 2,125,027**

1.3.2. Rescue

Table R-3, *Budget History-Rescue*, reflects the most recent five-years of funding received by the various Rescue Squads. The total budget allocation recommended to the Board of County Commissioners for FY 2000-2001 was $612,568, an increase of .2% over FY 1999-2000. Currently all Rescue budgets are prepared by squad members, who are volunteers.

All volunteers, the Rescue Association, made up of the six Squad chiefs and the Association president, present the budget to the Director of Emergency Services. The association works among themselves to allocate and distribute available funds between the various squads in order to address the most urgent needs identified. Subsequently, even though Hickory has the largest response area and the most calls, it does not mean that the Hickory Rescue budget is significantly more than any other.

Table R-3

Budget History – Rescue

	1996-97	1997-98	1998-99	1999-00	2000-01
REVENUE					
Investment Earnings	$ 5,332	$ 13,009	$12,709	-	-
Fund Balance Applied	11,460	-	-	$ 1,385	$ 27,000
From General Capital Projects	-	-	100,000	100,000	-
Miscellaneous	-	-	-	-	-
From General Fund	433,603	504,110	420,851	513,710	585,568
Total	**$450,395**	**$517,119**	**$533,560**	**$615,095**	**$ 612,568**
EXPENSES					
Catawba					
Capital	$ 50,615	-	$146,250	$ 7,500	$ 28,500
Operating	21,631	$27,350	39,428	39,450	41,423
Claremont					
Capital	$ 3,000	$ 8,683	$ 8,104	$179,470	$ 11,800
Operating	38,799	38,751	43,329	37,951	39,849
Hickory					
Capital	-	$ 8,748	$ 10,003	$ 3,920	$ 30,900
Operating	$54,017	49,510	53,888	58,425	61,346
Maiden					
Capital	$39,466		$ 59,500	-	$ 10,800
Operating	43,262	$ 44,998	40,228	$36,250	38,063
Newton-Conover					
Capital		$ 1,800	$ 8,167	$19,000	$ 18,250
Operating	$ 38,497	38,197	29,428	45,650	47,933
Sherrills Ford					
Capital	$ 45,369	-	$ 11,680	$12,900	$ 175,000
Operating	-	$ 48,998	44,005	39,770	41,759
Specialized Team	-	-	-	-	9,000
First Response	3,484	-	-	-	-
Accounting Services	9,065	8,545	2,155	12,606	9,024
Workers Compensation	8,000	-	-	-	-
Transfer to Capital Projects	-	200,000	-	51,003	-
Liability Insurance	95,190	41,539	37,395	56,000	48,921
Future Projects	-	-	-	15,200	-
Total	**$450,395**	**$517,119**	**$533,560**	**$615,095**	**$ 612,568**

1.3.3. EMS

Table E-3, *Budget History-EMS,* identifies fiscal year budgets since 1996. EMS is a County funded department, and all employees are County employees. The number of permanent employees has remained constant at 51 for the past five years. The FY 1998-1999 budget reflects the additional allocation of eight hourly employees. There were no additional employees recommended in the FY 2000-2001 budget.

The amount allocated for EMS for FY 2000-2001 was $2,675,291, a decrease of approximately 12.5 % over the previous year.

Table E-3

Budget History – EMS

	1996-97	1997-98	1998-99	1999-00	2000-01
REVENUE					
Charges and Fees	$1,233,195	$1,239,668	$1,091,630	$1,200,000	$1,200,000
Miscellaneous	1,518	1,666	4,504	1,000	-
General Fund	1,331,303	1,366,196	1,590,400	1,851,550	1,475,291
Total	$2,566,016	$2,607,530	$2,686,534	$3,052,550	2,675,291
EXPENSES					
Personal Services	$2,337,594	$2,375,582	$2,399,602	$2,423,812	$2,396,490
Supplies and Operations	196,378	198,488	249,577	278,738	263,801
Capital	32,044	33,460	37,355	350,000	15,000
Total	$2,566,016	$2,607,530	$2,686,534	$3,052,550	2,675,291
EMPLOYEES					
Permanent	51	51	51	50	50
Hourly	0	0	8.10	8.1	8.1
Total	51	51	59.10	58.1	58.1

1.3.4. Communications Center

Table C-3, *Budget History-Communications Center*, reflects an average increase per year over five years of 2.6%. The recommended budget for FY 2000-2001 was $1,016,051, a decrease of approximately 7% from the previous year. It is significant to note that there has been no increase in permanent employees over the past five years. In FY 1998-1999 there were 2.5 hourly employees added.

Table C-3
Budget History-Communications Center

	1996-97	1997-98	1998-99	1999-00	2000-01
REVENUE					
	-	-	$ 18,182	$60,420	-
Charges and Fees	$ 21,110	$ 19,505	22,100	23,000	$ 32,000
Miscellaneous	57	-	-	-	-
General Fund	984,364	883,757	916,073	1,007,506	984,051
Total	$1,005,531	$903,262	$956,365	$1,090,926	$1,016,051
EXPENSES					
Personal Services	$ 737,086	$738,856	$789,875	$ 862,706	$ 850,911
Supplies and Operations	190,376	126,093	161,135	148,800	151,890
Capital	78,069	38,313	5,355	79,420	13,250
Total	$1,005,531	$903,262	$956,365	$1,090,926	$1,016,051
EMPLOYEES					
Permanent	20	20	20	20	20
Hourly	2.15	2.15	4.57	4.57	4.57
Total	22.15	22.15	24.57	24.57	24.57

In the past year there have five permanent positions have turned over. This represents 25% of the communications center's permanent employees. While two of these departures were for health reasons, three were transfers to "road" positions and one to another position within the Sheriff's Department. A new employee in the Communications Center will require 5-6 months of training, including 3 separate certifications and appropriate on-the-job training before they are able to work alone. It appears current experience and practices permitting regular transfer out of the Communications Center within the Department are adversely impacting Center operations, if not the least, staff stress.

1.3.5. Emergency Services Department

Table, ES-1, *Budget History-Emergency Services Department,* **includes** EMS budget allocations previously identified in Table E-3.

Table ES-1

Budget History – Emergency Services Department

	1996-97	1997-98	1998-99	1999-00	
REVENUE:					
Federal	$ 15,000	$ 15,000	$ 18,004	$ 15,000	$ 15,000
State	2,000	2,000	2,000	2,000	2,000
Local	9,910	10,876	12,364	10,444	13,675
Charges and Fees	16,500	1,282,128	1,311,950	1,421,351	1,466,351
Miscellaneous	1,185,448	15,500	42,681	16,000	15,000
General Fund	2,178,340	2,157,860	2,199,029	2,594,079	2,304,832
Total	**$3,407,198**	**$3,483,364**	**$3,586,028**	**$4,058,874**	**$3,816,858**
EXPENSES:					
Personal Services	$2,918,464	$2,980,007	$3,057814	$3,088,502	$3,154,952
Supplies and Operations	379,578	379,228	411,100	499,211	516,891
Capital	109,156	124,129	117,114	423,188	17,000
To Debt Services	-	-	-	47,973	128,015
Total	**$3,407,198**	**$3,483,364**	**$3,586,028**	**$4,058,874**	**$3,816,858**
EMPLOYEES:					
Permanent	67	67	67	67	68
Hourly	1	1	9.10	9.85	9.85
Total	**68**	**68**	**76.10**	**76.85**	**77.85**

2. CHALLENGES

This section identifies the major challenges faced by emergency service providers in Catawba County today. In some instances these "challenges" might more appropriately be termed "obstacles "… to effectiveness. In other instances perhaps, as significant "concerns" … brought about by change. These challenges are organized and discussed as follows:

> **2.1 Responsiveness**
> **2.2 Volunteers**
> **2.3 District Boundaries**
> **2.4 Emergency Preparedness**
> **2.5 Summary Recommendations**

2.1. Responsiveness

The term "responsiveness" is used here rather than the more commonly referenced, "response time" for a reason. While "response time" may in fact be the issue, "responsiveness" addresses the characteristics that encumber response time and that must be reckoned with if the challenge of improving response time, i.e., service, is to be met.

According to the North Carolina Department of Insurance, State Fire Marshal's Office, the response time to get appropriate equipment to a structure fire should be no more than nine minutes. EMS service personnel speak to an eight-minute maximum, based on accepted medical guidelines. Rescue personnel interviewed stressed the importance of expedient response to any given emergency, especially medical, and suggested between three to five minutes, as appropriate.

While more frequently than not interacting with and/or against one another, the significant challenges impacting response time and confronted by the emergency service community today include five characteristics. They are:

> 2.1.1.   Effective Communications
> 2.1.2.   Availability of Personnel
> 2.1.3.   Availability of Equipment
> 2.1.4.   Development Density
> 2.1.5.   Geography

2.1.1. Effective Communications
The heart of an effective emergency service system is its communications center. In addition to the call volume data provided in the previous section, Figure C-1 below illustrates *Call Rate/Hour/Year*. For example, the number of calls received between 10:00 a.m. and 11:00 a.m. every day for the entire year. While these numbers are used in the communications industry to determine the number of call takers required to man a communications console/facility, they also can provide an accurate representation of workload or call distribution. For example, it can be said that between 4:00 a.m. and 6:00 a.m. (4 and 6 on the *x-axis)* the rate of calling drops considerably, while between 6:00 a.m. and 8:00 a.m. a spike/increase is experienced like no other during the day.

Data provided previously indicated that the average increase in call volume over the past five years has been 10.3% per year (46% over five years). During that time there has been no increase in full-time, permanent personnel. There is considerable concern throughout the emergency service community that this is not adequate to maintain the level of communications necessary to be effective.

Figure C-1

Call Rate/Hour/Year - Communications Center
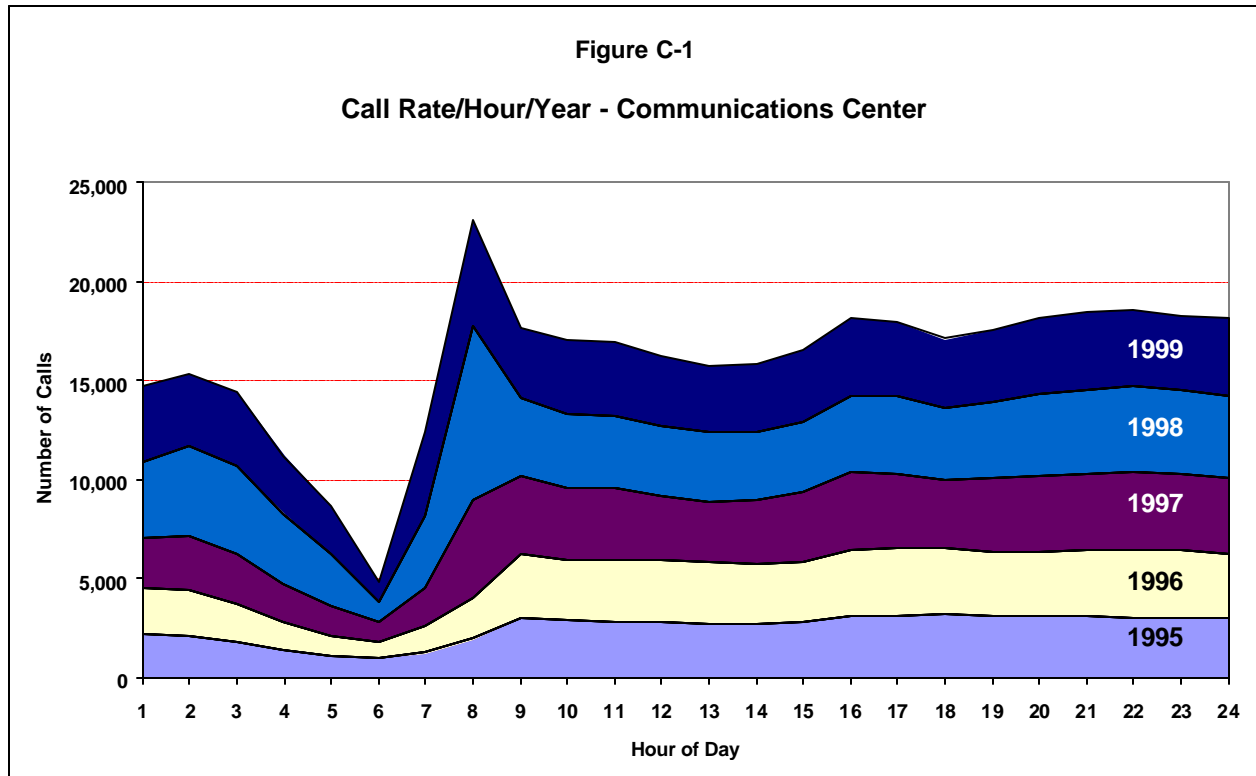
New procedures were implemented this past year that should significantly improve the effectiveness of communications between call-takers and responding emergency medical personnel. This system is referred to as Emergency Medical Dispatch (EMD). It is a communications program or process designed to provide valuable medical information to first responder/paramedic personnel while en route to an accident scene.

Dispatchers who receive an emergency call will stay on the line ask the caller a series of questions in an effort to focus in on the specific symptoms and circumstances being experienced by the victim. These questions may relate to physical/observed symptoms, known medical history, current medications, etc., and are based on approved medical protocols. Subsequently, they may also involve instructions for providing basic first aid in an effort to stabilize the patient's condition. In either case, any information received by the medical responder prior to arrival on the scene can work to the advantage of the patient and save valuable time.

In time, EMD will improve the efficiency of medical responders once they arrive at the scene. The EMD program, however, will only begin to address concerns that medical emergency calls may be interrupted by limited call takers having to respond to other calls. It will also mean, in all likelihood, **an increase** in the *average time per call*. Prior to the implementation of EMD, the average duration of calls received by call-takers in the Communications Center was 55 seconds. Coinciding with this concern is the availability of personnel.

2.1.2. Availability of Personnel

Throughout the interviews conducted for this study it would not be an exaggeration to say that there were as many opinions expressed about some issues as there were individuals interviewed. In contrast, there were two universally stated concerns throughout the emergency service community. They were that:

- "EMS needs help"
- "The Communications Center needs people"

While the availability of qualified volunteers will impact the question of personnel, the Volunteer issue is addressed separately in the section that follows.

2.1.2.1. EMS

The justification for additional EMS personnel is taken from the data in Section 1:

- In the past five years the number of calls for ambulance service has increased 31%. In turn, during that same period there has been no increase in permanent personnel.

- The average response time from the Propst and Newton bases has exceeded eight minutes and is approaching nine; the Catawba base has exceeded ten and is approaching 11 minutes; St. Stephens and Sherills Ford Bases are currently at 7.57 and 7.67 minutes respectively; Hickory is over seven minutes.

- At 10:00 a.m. on a recent Tuesday morning (June 2000), with weather clear and dry, every available ambulance and every on-duty paramedic was involved in an active call somewhere in the County.

- The average EMS call, once paramedics are on the scene and, depending on whether transport is involved can take anywhere from 45 minutes to several hours.

- While rescue personnel/first responders can provide basic first aid and considerable assistance, one must ask, "when does the patient receive qualified medical attention they need," in some instances, to survive?

2.1.2.2. Communications Center

The U.S. Department of Justice has studied call-taker staffing requirements. Their method is a function of average call duration and the number of calls received per hour. A matrix format (included in the Appendix) illustrates how this information is used to determine the number of call-takers required. In Catawba County these numbers are as follows:

> Average call duration in seconds (pre EMD) 55
> Number of calls received during busiest hour 170

Based on this data, and applying the Department of Justice formula, the Communications Center should have *five (5) full-time call-taker positions, on duty 24 hours per day.* If each position were to be covered 8,760 hours per year, this would require 25 permanent positions, assuming normal allocation for vacation time, sick time, holidays and training.

It is important to note, as suggested, that these figures were those experienced by the Communications Center prior to full implementation of the EMD program. As stated, EMD *will* enhance the effectiveness of medical personnel dispatched to emergencies; however, it will require dispatchers to remain on the line longer per call, i.e., *extending* call duration. Were this to add a modest 15 seconds to the average call duration for each call received, the minimum call-taker staffing would need to increase to six (6) permanent positions. Based on the call rate/hour/year (Table C-2), additional full-time or part-time/hourly personnel may be necessary to support permanent staff during consistently peak periods of activity.

2.1.3. Availability of Equipment

Due to the number of departments and the assigned vehicles to each, the Fire Department equipment lists are provided in the Appendix. Equipment lists for Rescue, EMS and Emergency services are provided below as Tables R-4, E-4 and ES-2, respectively. In the context of this subsection, equipment refers to vehicles.

Table R-4

Rescue Equipment

Catawba	Claremont	Hickory	Maiden	Newton-Conover	Sherrills Ford
No. & Type	No. & Type	No. & Type	No. & Type	No. & Type	No. & Type
950 Boat 951 Suburban 953 Ambulance 954 Small Crash Truck	CL1 Boat 961 Crash Truck 963 Ambulance 964 Large Crash Truck	940 Crash truck 941 Ambulance 943 Ambulance 944 Suburban 945 Ambulance 946 Crash Truck 947 Ambulance	Md Boat 975 Tactical Unit 981 Ambulance 982 Wheeled Coach 983 Suburban 984 Crash Truck Md2 Lt. Rescue	923 Small CrashTruck 924 Ambulance 926 Ambulance 927 Large Crash Truck	971 Ambulance 972 Crash Truck 973 Suburban 974 Boat 975 Tactical Rescue Unit

Table E-4

EMS Vehicle Status

Unit #	Mileage	Usual Location	Make	Model	Year
81	201,788	St. Stephens Base/Spare	Ford	F350	1992
82	201,788	Hickory Spare	Ford	F350	1991
84	147,566	Catawba/Spare	Ford	F350	1988
85	116,353	Neonatal Unit @ FRMC	Ford	F350	1990
86	114,902	Catawba/ C-4 Frontline	Freightliner	FL60	1998
87	217,850	Spare Unit	Ford	F350	1990
88	151,472	Propst/ C-6 Frontline	Ford	Explorer	1992

Unit #	Mileage	Usual Location	Make	Model	Year
91	224,185	Newton Base/Spare	Ford	F350	1990
92	N/A	Newton/Spare Van	Ford	F350	1988
94	194,421	Newton/Spare	Ford	F350	1991
401	202,430	Propst Base C-9	Freightliner	FL60	1994
402	169,460	Hky/ C-1 Frontline	Freightliner	FL60	1994
403	148,628	St. Stephens/ C-2 Frontline	Freightliner	FL60	1994
404	50,515	Hky/ C-8 Frontline	Freightliner	FL60	1998
701	181,122	Newton/Spare Van	Ford	F350	1987
300	71,155	Newton/Weldon's unit	Chevrolet	S10 Blazer	1992
305	173,120	Newton/Greene's unit	Chevrolet	Caprice	1993
90	13,029	Sherrills Ford Base C-7	Ford	F350	1999
405	2,115	Newton Base C-3	Ford	F450	1999
406	640	Spare Unit	Ford	F450	1999
407	657	Spare Unit	Ford	F450	1999
408	5,165	Newton Base C-5	Ford	F450	1999

Note: See also reference to Table E-4 in Section 1.1.3.

Table ES-2

Emergency Services Department - Mobile Equipment

Vehicle/Equipment	Length	Width
Blazer 4x4 used for pulling and backup vehicle	12	8
Truck w/utility body, for pulling and backup vehicle	14	8
Rehab. and Support trailer (furnished by State)	30	9
60 KW generator	15	8
30 KW generator	15	8
Radiological Response trailer (for McGuire)	16	8
Fire Training and Testing trailer	14	8
Fire Education trailer	8	8
Emergency Support vehicle	26	8
Boat	24	8
Special Needs trailer	16	8
Mobile Operations Center	37	8
475 KW generator (if not installed in Gov. Center to be mobile)	30	8
Hazama Trailer with type of truck to pull (near future)	45	9

2.1.4. Development Density
Here, the following illustrations are provided as an aid in addressing the density issue:

- Figure CC-1, *Major County Highways*, highlights the major roads and highways, which have, are currently, or soon will support and facilitate development.

- Figure CC-2 *Projected Growth Areas,* identifies regions of the County where recent studies have indicated that the most active, near-future growth will occur.

Figure CC- 1

Major County Highways
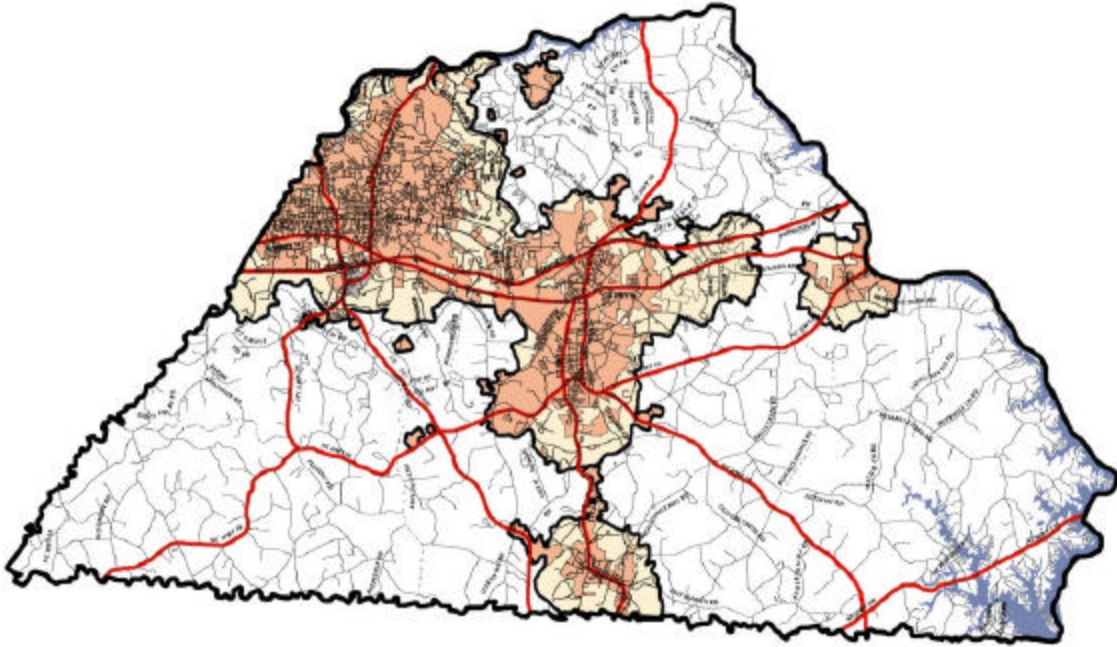
Figure CC- 2

Projected Growth Areas
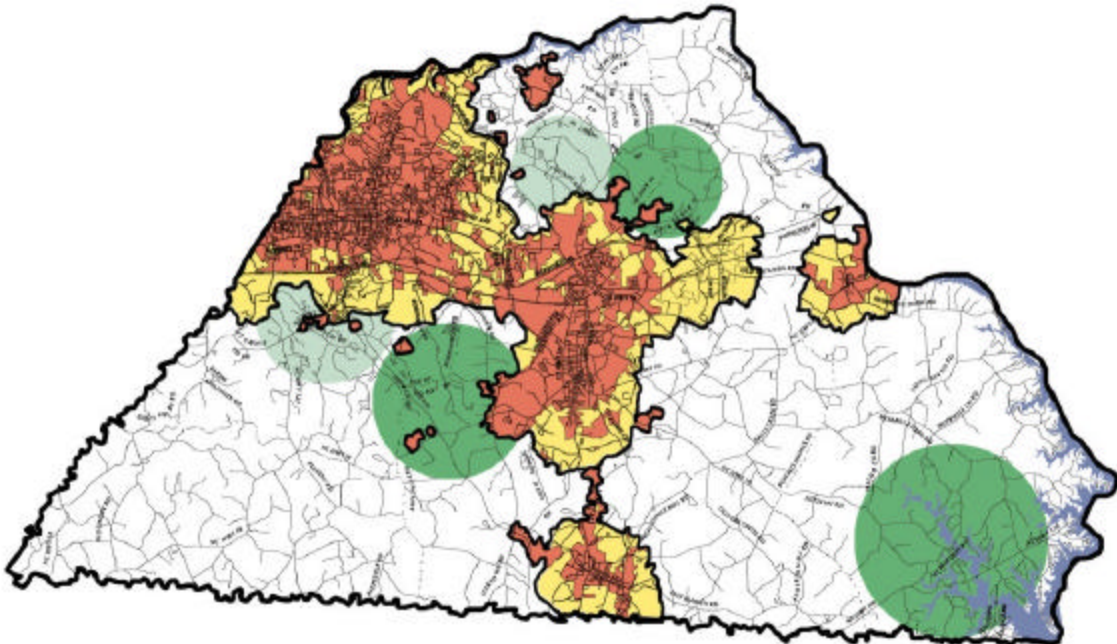
The issue illustrated here is *not* development. It is that the denser development gets the greater the impact on response time of emergency personnel and vehicles. Many of the Fire Chiefs and Rescue personnel interviewed talked of roadway congestion due to increased vehicle traffic. The Current Hickory EMS Base at Lenoir-Rhyne Boulevard and 2nd Avenue S.E. is often so busy, vehicles have no where to move to get out of the way of an ambulance (with lights and siren going) trying to respond to a call. A similar condition exists for the St. Stephens EMS base, when vehicles must access Springs Road during rush hour or otherwise heavy traffic times.

According to the County's *Strategic Growth Plan* (Benchmark Incorporated, 1999) there are 132 miles of primary roads and highways and 879 miles of secondary roads for a total of 1,011 miles of roads. In addition to Lenoir-Rhyne Boulevard and Springs Road, Highway16 and Highway 10 (Startown Road) traffic volumes are increasing rapidly. Plans for widening Highway 16 are in progress.

Most significantly, according to the plan, are serious concerns for NC 150 and NC 127, which are now over practical carrying capacities and have no set plans in place for improvements.

The challenge now is to improve response times in these congested areas. The challenge in the future will be to anticipate and adequately plan for this development to address the issue prior to the density overwhelming the effectiveness of the service.

2.1.5. Geography
With the possible exception of Baker's Mountain in the west, the most common geographical feature that may (or does) impede response times is water. For the most part, this is managed via existing bridges, roadways, etc., as well as the distribution of service districts. This is not the case in the Sherrills Ford area, however.

No area in the County has the geographical obstacles to accessibility and response, as does Sherrills Ford. The intricate waterways jutting inland from Lake Norman, as well as the many, many intricate and small peninsulas have residents, who in an emergency, would be or are difficult to reach in a timely manner. At night or during inclement weather the difficulty increases. Response time data for Fire, Rescue and EMS services reflect this difficulty. While recent historical call volume is not excessive in comparison to other departments and districts it is clear: geography impacts effectiveness and impedes response time.

2.2. Volunteers

The use of volunteers to provide fire and rescue services on a consistent basis has become an increasing concern in Catawba County as well as many areas throughout the state. Initially, it appears, because the number of volunteers has been decreasing in recent years. And, although almost 700 volunteers (689) are reported on the rosters of the County's fire departments and rescue squads, of greater concern is the *availability* of enlisted volunteers to respond to calls when they occur.

Currently, the services utilizing volunteers do so in one of three ways:

- As a total volunteer organization,
- As a predominately volunteer organization supported by paid personnel, or
- As support to an emergency service organization that is made up of predominately paid personnel

Although the volunteer issue or challenge, as the case may be, is of concern to both fire and rescue services, the reason it does not appear to be impacting fire as significantly is perhaps one of logistics. For example:

> The 12 fire departments with *paid* personnel responded to 90% (3,837) of all the calls received during fiscal year 1998-1999. During daytime hours paid staff were able to respond immediately to calls with the appropriate apparatus and receive support at the scene from volunteers who were able to respond. During evening hours, if paid personnel were not on duty, in all likelihood volunteers were more readily available and likely to respond.

> Rescue personnel are typically dispatched as first responders to accident scenes to provide primary backup (ambulance) transportation to the County's EMS operation. While many rescue personnel carry basic gear with them in their personal vehicles, they also will need specialized equipment to adequately address the various types of rescue situations they encounter. Further, they will certainly need an ambulance if they are to transport a patient. These vehicles and apparatus are not typically available to volunteers who are at their place of employment during the day, or at home during the night. Someone has to get them. In addition, there are only seven (7) Rescue bases (vs. 17 fire) from where equipment may be obtained.

2.2.1. Fire

Historically, volunteers have been the backbone of the County's rural fire service. Today, all but five of the 17 fire districts have at least one paid staff member, and in the case of Hickory, over 100. Table F-5, *Fire Service Personnel*, indicates the number of paid and volunteer personnel for each department, as reported by them. As noted, over 560 volunteers continue to provide services to the various departments.

Table F-5
Fire Service Personnel

Department	Volunteer	Paid
Bandys	51	0
Catawba	28	0
Claremont	34	1
Conover	34	8
Cooksville	27	0
Denver	26	1
Hickory	23	112
Icard	35	1
Longview	24	7
Maiden	38	1
Mountain View	34	1
Newton	35	14
Oxford	35	1
Propst	44	0
St. Stephens	28	1
Sherills Ford	44*	1
Startown	24	0
Total	**564**	**149**

Note: * Sherrills Ford is a combined fire and rescue operation.

Hickory, Newton, Conover and Longview have paid personnel on duty 24 hours per day. Claremont, Icard, and Mountain View departments each have a paid Chief's position. The personnel employed by Denver, Maiden, Oxford, St. Stephens and Sherrills Ford are typically classified as either "driver" or "engineer."

2.2.2. Rescue

Since incorporated as non-profit organizations in the 1980's, the County's six Rescue Squads have been staffed totally by volunteers. Since funding of operations began in 1991, they remained volunteer until July of this year. Commencing July 1, Hickory rescue was authorized funding for a paid position. Hickory Rescue is the largest geographic area of the six squad districts and responds to significantly more calls than any other District in the County.

Table R-4, *Rescue Volunteers*, illustrates the number of volunteers on the rosters of the various Rescue Squads as reported by them.

Table R-4
Rescue Volunteers

Squad	No. Volunteers
Catawba	24
Claremont	30
Hickory	28
Maiden	22
Newton-Conover	21
Sherrills Ford	44*
Total	**169**

Note: * Sherrills Ford is a combined fire and rescue operation.

2.2.3. The Dilemma
The primary circumstances impacting the level of volunteer involvement in the emergency services today appear to be the following:

2.2.3.1. Employment Conditions. It has become increasingly difficult in recent years for employers to permit employees who are volunteers of the various emergency service organizations to arbitrarily/suddenly leave work and their employment responsibilities to respond to an emergency for perhaps as long as two to three hours. Even for self-employed individuals, it is often difficult to drop everything and just "go."

2.2.3.2. Training Requirements. Unlike years past, individuals wishing to volunteer can no longer just show up and say, "I'm here." According to the North Carolina Office of State Fire Marshal, a registered Rescue Squad must maintain no less than four members who are certified Emergency Medical Technicians (EMT's) to maintain their certification. This requires **160 hours** of training initially, in addition to at least 36 hours annually in continuing education classes. This is **in addition to** time spent in weekly meetings, preparing paperwork, studying and practicing with various pieces of equipment, etc. Also, specialized pieces of equipment, such as an automatic electronic defibrillator, will require additional training and in some instances separate certification, before it can be used.

2.2.3.3. Administrative Requirements. For every call responded to there are reports. In addition to training records, vehicle and equipment maintenance records, roster maintenance and general correspondence there is also the annual budget process and its accompanying time requirements for preparation and presentation.

2.2.3.4. Pace of Life. It goes without saying that the pace of life generally, has accelerated. The responsibilities of family, home, work, school and community are time consuming for the average person. To the fire or rescue volunteer there is the added responsibility of time required of them day and/or night that they spend in the service of those in need.

2.3. District Boundaries

Catawba County covers a geographic area of approximately 412 square miles. Included within its boundaries currently are eight municipalities and several hundred square miles of unincorporated area, some densely developed or developing, some very rural. As stated, this area is currently divided into 17 fire districts, six rescue districts and six EMS service areas.

- Figure CC-3a identifies the approximate locations of the various Fire stations, Rescue and EMS bases throughout the County.

- As Figure CC-3b illustrates, none of the current district boundaries coincide with one another.

- All of the current boundaries overlap, usually a number of times, with multiple district areas of other services providers.

- Dispatching can be difficult. For example, a single incident/911 call at a specific location can require dispatch of three different services from three different jurisdictions, i.e., St. Stephens EMS, Claremont Rescue and Conover Fire Department or, Sherrills Ford EMS, Maiden Rescue and Denver Fire Department.

- Fire and Rescue responders in various locations often find themselves traveling through another service district to get to the call that is actually in their district.

- Some boundary lines just do not make sense. Hickory Rescue area boundaries include the entire city of Hickory **plus** the entire western boundary of the County – almost 40% of the County's total land area.

Figure CC-3a
Location of Existing Fire Stations, Rescue & EMS Bases
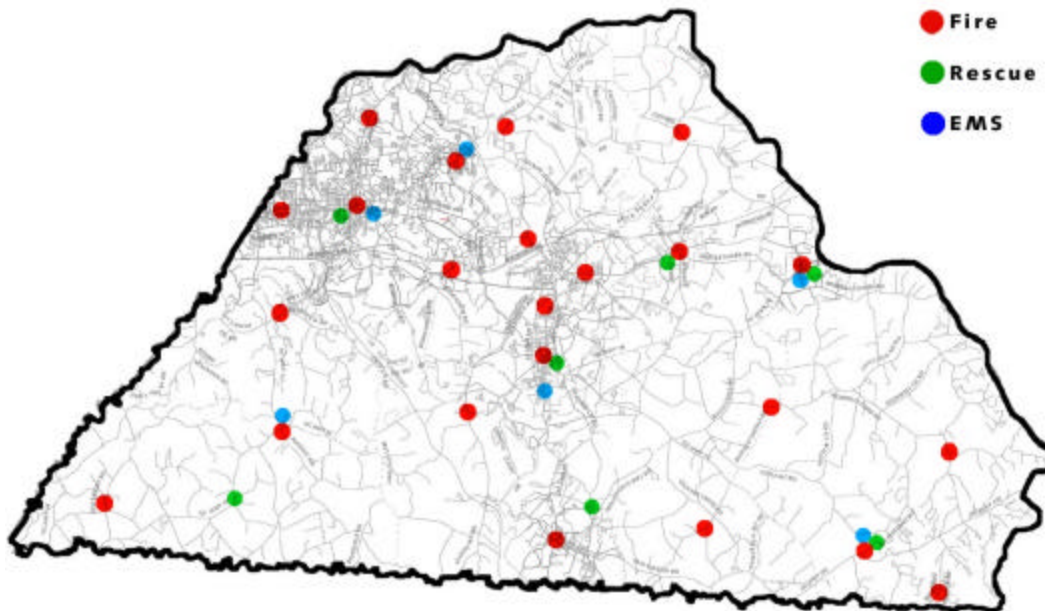
Figure CC-3b
Overlay of Existing Fire, Rescue, EMS District Boundaries
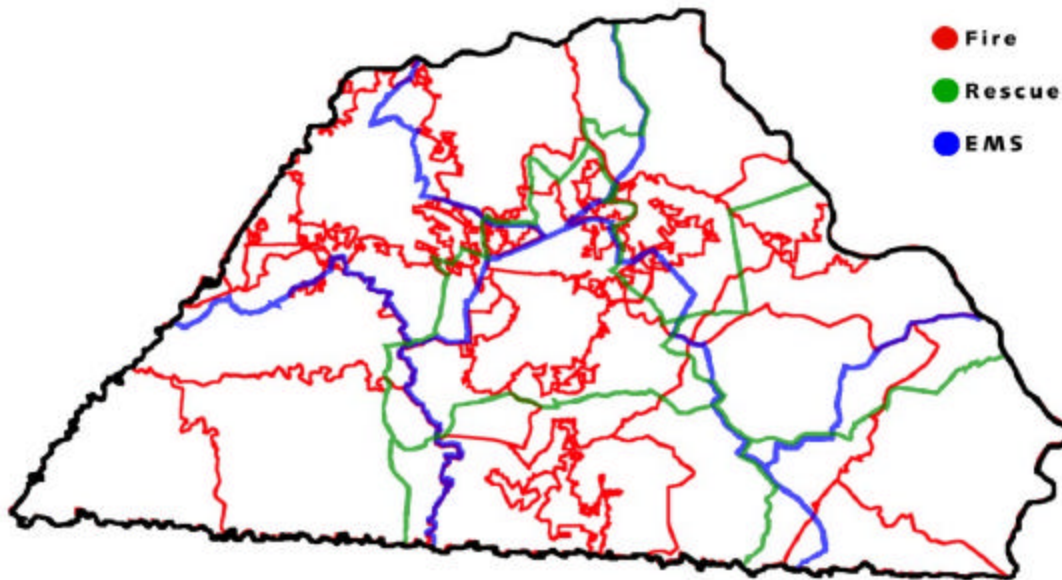
Rescue and EMS district boundaries are set by County ordinance and may be changed at any time by a revision to those ordinance(s).

As for the fire districts, although established by legislation in the 1970's, there are a number of options available to the County, within the authority of the Board of County Commissioners, to adjust these boundaries. Most commonly, these options will include either the establishment of a local "service district" or, legislation via a "local act"

2.4. Emergency Preparedness

Emergencies, in whatever form they occur, will present continuous challenges to the County and its residents. Having organized plans and procedures in place and personnel trained and practiced in their implementation will be essential to minimizing the potential harmful and/or damaging effects of any such disaster that could occur.

The "traditional" or "natural" emergencies related to hurricane, flooding and heavy snow cannot be ignored. However, population growth, an expanding and improving highway system, and "our changing times", all dictate new concerns. Expanding and improved roads lead to increased volume and greater speeds, which in turn presents a greater likelihood of a chemical or other hazardous material accident, as well as potentially catastrophic highway accidents. The potential nuclear accident or arbitrary act of terrorism cannot be ignored either.

2.4.1. Emergency Services Department
The Director of the County's Emergency Services Department is responsible for coordination of emergency services countywide and specifically for emergency management and service coordination in the event of an emergency or natural disaster.

In the event of an emergency, emergency procedures would be implemented and the Emergency Operations Center (EOC) activated. The EOC serves as the command center, during any declared emergency, for representatives of all emergency service and enforcement agencies as well as appropriate government officials.

Currently, a number of issues are hampering the effectiveness of the Department. They include:

- Administrative offices are not co-located with the EOC.
- The EOC is much too small and ineffective technologically.
- EMS Management is located away from department administration.
- The department Director is responsible for non-emergency service functions; i.e., Animal Control and Veteran's Services.
- Unlike Fire and EMS, Rescue lacks an advocate in the Emergency Services Department to communicate information on a regular basis and coordinate services countywide.

2.4.2. Facilities

The "Catawba County Long-Range Facilities Plan", June 2000, provides recommendations for the expansion of offices for the Emergency Services Department and the subsequent relocation of the EOC to space adjoining.

There are currently a number of vehicles and mobile equipment on hand and the responsibility of the Department, for which there is no dedicated garage or covered storage facility. These include the Fire Education Trailer, a 60KW and 30 KW Generator, the Mobile Operations Center and Radiological Response Trailer.

2.4.5. Personnel

Various service personnel expressed concern during interviews for this study that Emergency Services Department personnel increase efforts to more effectively communicate with the related agencies throughout the County. This might be accomplished by attending various association meetings, participating in organization activities, making site visits and the like.

Other related interests relayed included assistance in getting updated County maps, the development of resources and research material and the forwarding of announcements regarding training opportunities that become available.

2.5 Summary Recommendations

Table SR-1 provides *Summary Recommendations* that are intended to coincide with the issues addressed in Section; Current conditions and particularly with the Challenges identified here in Section 2. A corresponding implementation schedule is provided in Section 3 in conjunction with the Plan for 2010.

Table SR-1
Summary Recommendations

Service/Area		Recommendation	Basis
Communications	C.1	Add two (2) additional, full-time 24-hour positions.	Call volume data, Section 1.1.4, EMD program implementation, general dispatcher effectiveness, refer to commentary regarding staff turnover, Section 1.3.4, page 19.
	C.2	Evaluate pay grade and training requirements.	Advances in technology in telecommunications industry, technical skill requirements, EMD skills are diverging from law enforcement concentration; also to coincide with recommendation C.3.
	C.3	Promote professional dispatch position vs. "transition" position pre/post law enforcement.	Current Sheriff's Department practice of permitting transfers within department; i.e., "going to the road", does not foster consistency of operations.
	C.4	Develop cross-training program.	Expose field and emergency service personnel to dispatch environment and issues and dispatch personnel to field to ride along and incident observation
EMS	E.1	Provide personnel, facility and equipment for a full service transportation base in the Oxford area.	Response times from Catawba are poor and increasing due to distance, geography and call frequency.
	E.2	Upgrade current Propst and Sherrills Ford bases to full-service transport facilities.	Density of growth and geography issues in Sherrills Ford. Propst base to help address call volume in Hickory/South Hickory/Mountain View.
	E.3	Hire full-time Operations Officer to provide assistance to department management and liaison with base supervisors.	Department management needs support to coordinate day-to-day operations of services. EMS manager must staff EOC upon activation and field person needed.
	E.4	Provide QRV and personnel during weekday hours in Maiden.	Volunteers not available during weekday hours to provide medical first response, due to employment locations. Also, volume of calls in Newton and Conover that Newton base must now cover.
	E.5	Align EMS Service Districts with new Fire District Boundaries.	Efficiency of dispatch, deployment and cross-service coordination.

Service/Area		Recommendation	Basis
	E.6	Address traffic congestion and vehicle accessibility to highway at Hickory and St. Stephens base locations.	Lenoir-Rhyne/2nd Avenue S.E. in Hickory and Springs Road in St. Stephens are very difficult to access due to traffic conditions and in some instances public courtesies when an alarm must be responded to. Traffic signals that can be activated by EMS personnel are badly needed.
Rescue	R.1	Hire a full-time Rescue Coordinator position in the Emergency Services Office to serve as advocate/liaison with County Rescue units.	Coordination needed with Rescue Association and squads countywide; liaison with other emergency service agencies and activities; support and assistance in annual budget process.
	R.2	Split current area of Hickory Rescue District into two areas; Hickory and South Hickory (or Propst/Mountain View).	Call volume is 2 to 3 times higher than any other Rescue area, and land area covered is almost 40% of the County.
	R.3	Negotiate assumption of first responder and basic rescue responsibilities, currently provided by Hickory Rescue, with Hickory Fire Department.	City's plans are already underway to do so. Reponses from 6, soon to be 7 fire stations, and availability of personnel will reduce response time and provide greater comprehensiveness of response at scene.
	R.4	Negotiate assumption of first responder and basic rescue responsibilities, currently provided by Newton-Conover Rescue, with Newton Fire Department.	City has equipment and personnel trained to do so. Response from two fire stations and availability of personnel will reduce response time and provide greater comprehensiveness of response at scene.
	R.5	Align Rescue Districts with new Fire District boundaries.	Efficiency of dispatch, deployment and cross-service coordination.
Fire	F.1	Realign district boundaries.	Current boundaries are 25 years old. With individual department input, new boundaries can be more efficient, improve coordination, deployment of services, and consistency of cross-services assistance.
	F.2	Establish "service districts" that coincide with new boundaries for assignment of new tax rates.	Efficiency, economy and fairness to district property owners. *North Carolina General Statutes, Article 16, Chapters 153A-300 through 153A-304.*

Service/Area		Recommendation	Basis
	F.3	Establish fire alarm ordinance/penalty	Refer to Table F-2, Section 1; numbers are approaching 1,000 per year.
Emergency Services Department	ES.1	Hire Rescue Coordinator	Coordination & accountability.
	ES.2	Restructure department to enable focus to be solely emergency services.	Reassign Animal Control and Veterans' Services components to other departments.
	ES.3	Provide alternative arrangements for the transport of Medical Examiner cases.	Current practice of requiring EMS ambulances to transport corpses from accident/crime scenes is time consuming and cost ineffective considering the volume and frequency of emergency calls, which should receive priority.
	ES.4	Research and data analysis.	Fire Marshal and Rescue Coordinator should be responsible for developing research material and significant data regarding trends, technology and day-to-day/regular reporting of/by local squads and departments.
	ES.5	Provide specifically equipped (County) vehicle to Fire Inspector on call.	Must be able to respond, with appropriate equipment, gear, testing materials, etc., to almost any area whenever called.
	ES.6	Provide adequate facilities	Provide adequate space to combine Emergency Services, Administration, Fire Marshal and EMS management under one roof. Relocate Emergency Operations Center (EOC) from Justice Center to Government Center adjacent to Emergency Services Administration. Provide garage facility for department vehicles.
County/Other	CO.1	Establish standing Emergency Services Steering Committee.	Coordination of activities, planning, technology and operations is paramount to the effective delivery of countywide emergency services. Membership to include representation from all emergency service disciplines and major law enforcement entities.
	CO.2	Develop a series of public service announcements as campaign to increase public awareness.	Emphasis should be expected and required courtesies extended by motorists on the road when in the path of an emergency vehicle. Current situation is at times quite poor.

Service/Area		Recommendation	Basis
	CO.3	Develop, document publish and distribute a formal Incident Command System (ICS) policy and SOP.	Should be the first assignment of the Steering Committee and considered vital to effective communications and incident management on any scene involving multiple services and law enforcement.
	CO.4	Hire a certified ambulance and emergency vehicle mechanic. Or train and certify existing personnel.	Special vehicles require special skills. The better maintained the longer they will last. Also, vehicles get far greater than average mileage per year and need specific skills and attention.

3. A Plan for 2010

This plan outlines a concept for the efficient delivery of emergency services Countywide. Its success will depend upon the current emergency service providers, as well as the County and the various municipalities and townships, **working together,** for the good of the County, its municipalities, residents and visitors.

In order to provide the residents of the County with the level of fire, rescue and emergency medical service that coincides with the changing characteristics of the County, the characteristics of the system, as it currently exists, must change.

Driving this Plan are the challenges identified in Section 2. These challenges, *particularly* those having to do with the issues of responsiveness, must be addressed.

The primary elements of the Plan include consideration of the following:

> **3.1 Anticipated County Growth & Development**
> **3.2 Realignment of Service District Boundaries**
> **3.3 Consolidation of Services Currently Provided**
> **3.4 Implementation Issues & Schedule**
> **3.5 Funding Requirements**

3.1 Anticipated County Growth & Development

Diagrams illustrating expectations regarding growth and development in Catawba County over the next ten years were presented in Section 2 as Figures CC-1 and CC-2. By 2010 it can be assumed that the majority of the County's residents will be living within the extra territorial jurisdiction (ETJ) of an incorporated municipality or township. Further, that the total land area remaining unincorporated will have shrunk from present day proportions. All indications are that County growth beyond 2010 will continue.

Subsequently, additional diagrams are provided here that attempt to anticipate growth and development density as well as incorporated municipal boundaries and/or ETJ's by the year 2010 and, as the case with Figure CC-7, perhaps beyond. They include:

Figure CC-4, Existing Municipal Boundaries

Figure CC-5, Existing Municipal Boundaries w/Corresponding ETJ's

Figure CC-6, Anticipated Annexation and/or Municipal Level Growth Density

Figure CC-7, Potential Long-Term Municipal Level Growth Density

Figure CC-4
Existing Municipal Boundaries
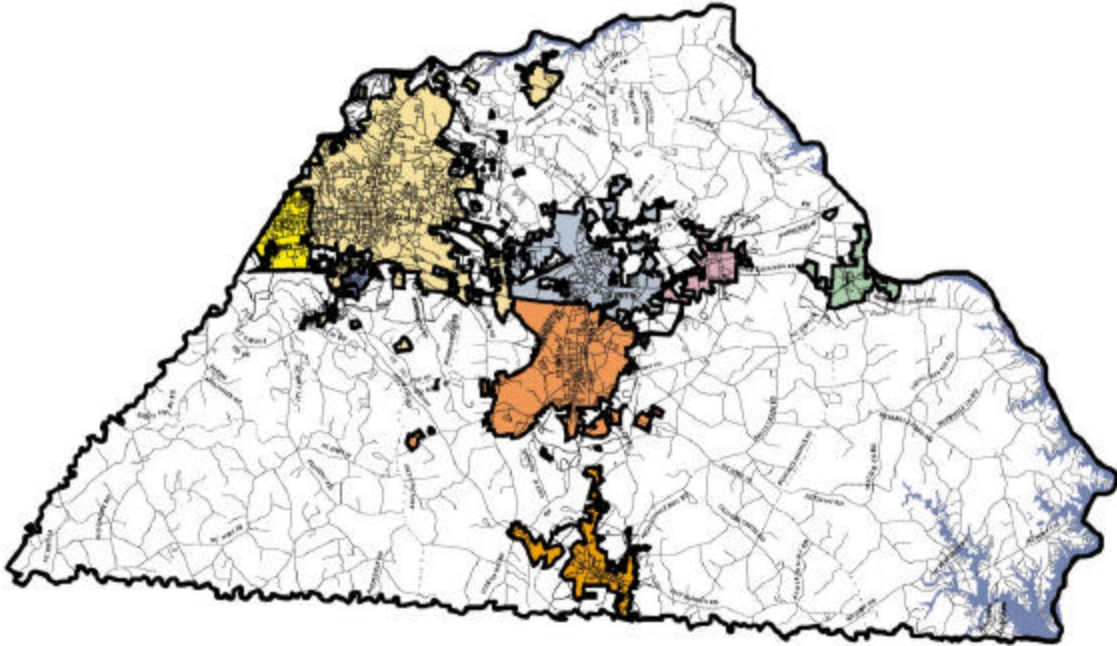
Figure CC-5
Existing Municipal Boundaries with Corresponding ETJ's
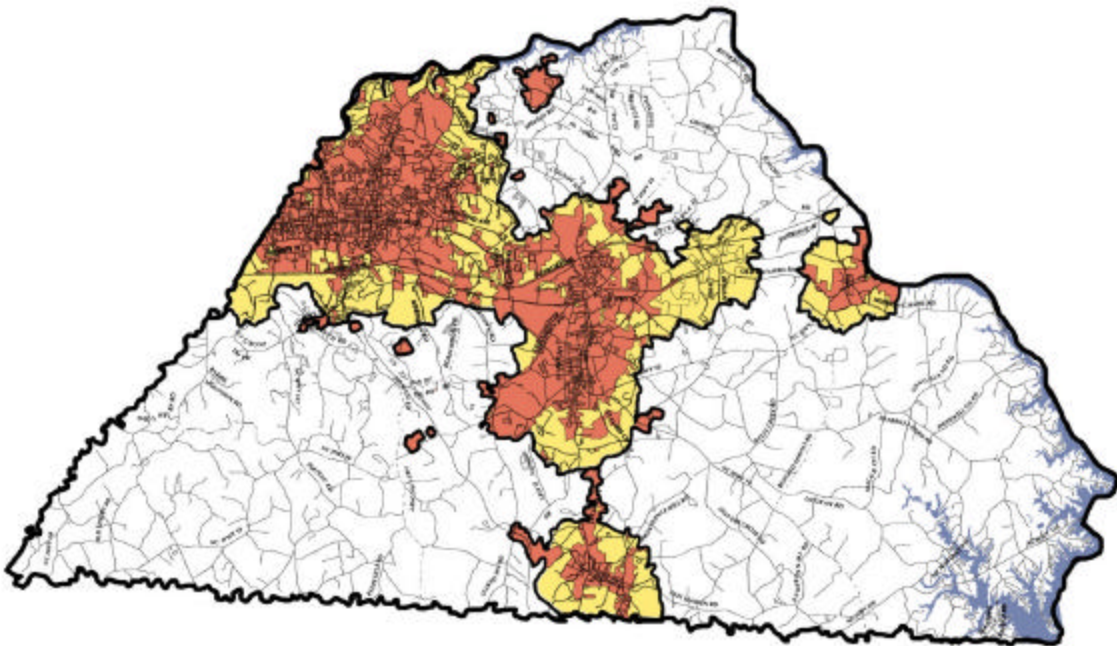
Figure CC-6
Anticipated Annexation and/or Municipal Level Growth Density
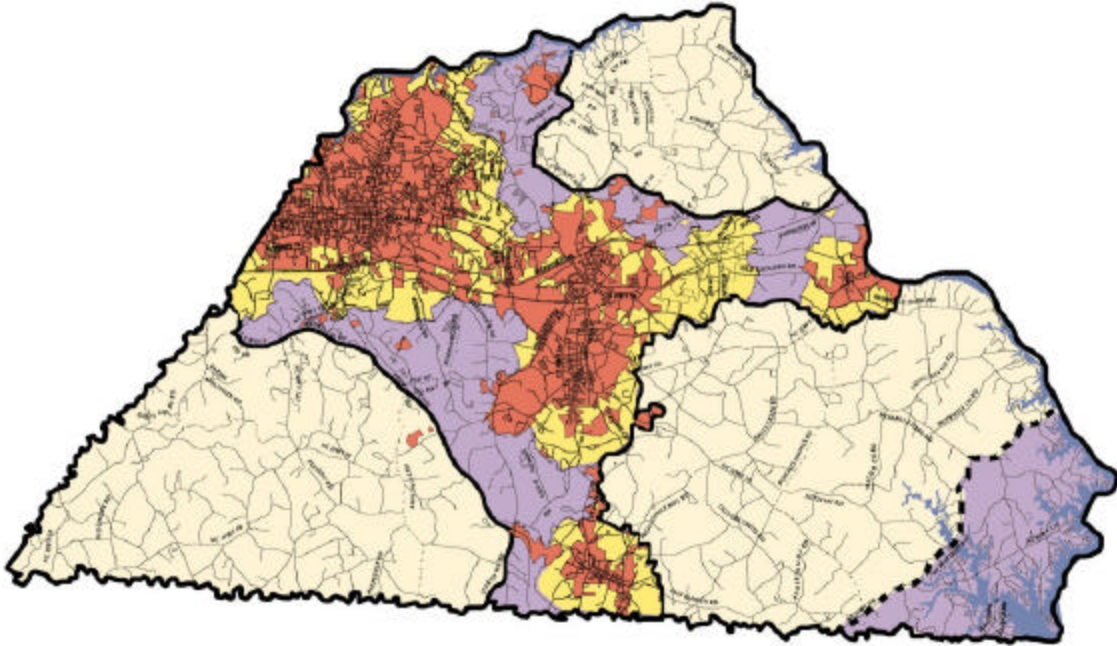
Figure CC-7
Potential Municipal Level Growth Density
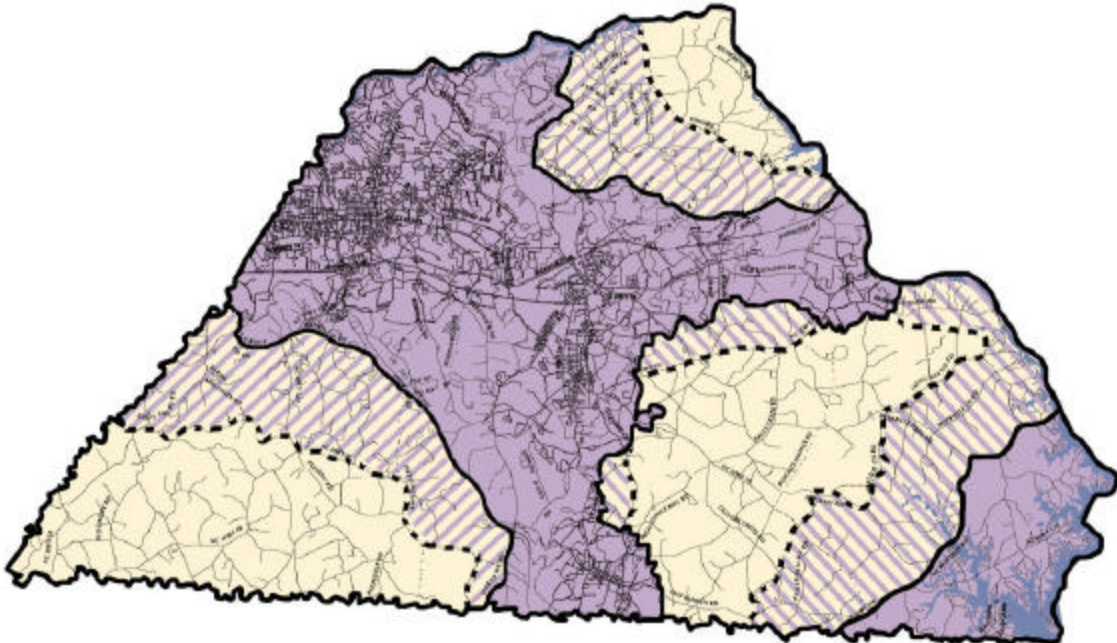
As stated, what this growth of this magnitude means is that the incorporated areas of the County will be larger. The unincorporated areas will be smaller. Also, the area(s) adjacent to major incorporated areas will be more heavily populated with business or residential development at a level that will simulate the municipality it adjoins. This will be a significant consideration when defining level of service and district boundaries.

3.2 Realignment of Service District Boundaries

A proposed realignment of Fire, Rescue and EMS district boundaries is illustrated in the accompanying diagrams, Figures F-2, R-2, and E-2. It should be noted that when the actual realignment exercise is undertaken, the results may differ somewhat from that shown. **It is the intention of this Plan proposal to emphasize the concept and importance of realignment not necessarily *what* the exact boundaries will be.**

Further, the realignment effort suggested must involve the incorporated jurisdictions and municipalities as well as individual fire department and rescue squad representatives. In interviews and meetings conducted during the course of this study, a number of very significant issues and suggestions were offered in this regard.

Following each of the proposed service district diagrams are summary comments regarding primary elements of the realignment.

3.2.1. Fire District Boundaries

Figure F-2
Proposed Fire Districts
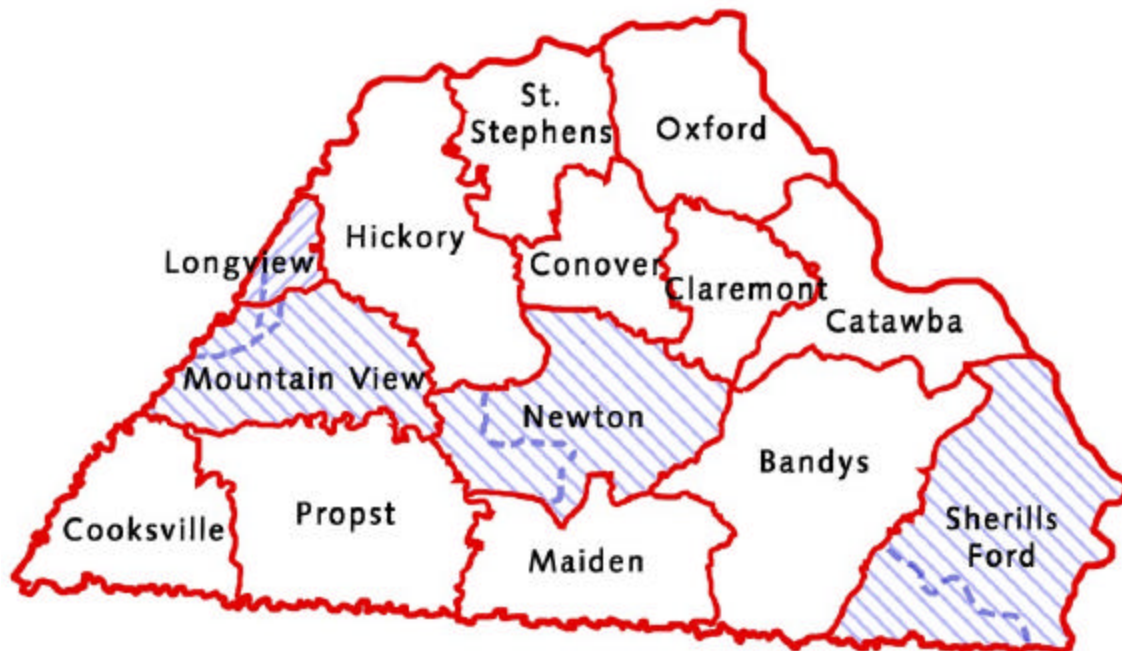
In this scenario:
- Following realignment of the fire district boundaries, fire services will be provided by 14 fire departments.

▪   What is now Startown will be part of Newton

▪   What are now Icard 1 and Icard 2, will become part of Longview and Mountain View, respectively.

▪   What is now Denver will become part of either Bandys or Sherrills Ford.

▪   While the level of service currently provided by Icard and Denver Fire Departments is very good, it is recommended the County and/or designated municipality or existing fire district/department assume responsibility for the provision of services within County boundaries.

▪   Of the resulting 14 departments:

 ✓   Seven (7) would provide municipal services – Hickory, Newton, Conover, Claremont, Longview, Maiden and Catawba.

 ✓   Three (3), although (perhaps) still unincorporated, would provide municipal *level* services – St. Stephens, Mountain View and Sherrills Ford.

 ✓   Four (4) would provide rural level services – Cooksville, Propst, Bandys, Oxford.

▪   All incorporated/municipal area departments' as well as municipal *service level* districts, although yet unincorporated, will assume basic rescue/first responder duties.

3.2.2. Rescue District Boundaries

Figure R-2
Proposed Rescue Districts

It is the recommendation that basic rescue services, including first response and basic first aid be provided by the municipal/municipal-level fire departments. Volunteers certified to do so would continue to serve during any response situation.

- Rescue districts will be reorganized and aligned with the new fire district boundaries as shown in Figure R-2.

- The number of rescue districts will be reduced to three. These three districts, however, will still technically provide coverage of the entire area of the County.

- The primary base for each of these districts will be located proximate to the center of the district, with preference of location given to the yet unincorporated rural areas of the County.

- While basic rescue services in the municipal service areas will be provided by the corresponding fire departments, the primary rescue bases located within the new rescue areas will be primarily responsible for the unincorporated areas of the County.

- A full-time, rescue-certified, employee should be hired to man the base and respond to calls during normal, daily business hours. While not responding to calls, responsibilities regarding record keeping, vehicle maintenance, training, administrative paperwork and budget related activities should be addressed.

- Existing Rescue bases will most likely be incorporated into the municipal-level fire service district with which they are most closely associated. Municipalities may also wish to discuss contracted and/or shared services depending on their proximity to one another.

- Some existing Rescue bases as they are known today may be dissolved and/or merged with existing Fire service departments to make efficient use of equipment and operating budgets.

- Rescue bases may be co-located with rural level fire service departments and/or EMS providing the facilities are adequate to accommodate the varied needs of each.

3.2.2.1. Specialized Rescue Services

A number of current County Rescue personnel (now volunteers) have received extensive training and certification in various specialized areas of rescue. Concurrently, there has been legislation proposed at the State level that would create a regional Urban Search and Rescue (USAR) Strike Force. The current proposal, as written, is a regional team that includes members from various counties and jurisdictions throughout a four-county region. Catawba County's representation in this legislation and on this task force is the Claremont Rescue Squad.

These specialized rescue functions are extremely important. Incidents occurring of this type involve extensive training, higher risk and typically considerable time in responding to a single, complex situation or incident.

These specialized rescue categories include:

- Swift Water Rescue
- Trench Rescue
- High Angle/Rope Rescue
- Collapsed Building Rescue
- Confined Space Rescue

The efforts of this all-volunteer Strike Force could very well seek and received funding for training and equipment from the private sector, however, should it not be overlooked by the County **or** its municipalities. Everyone or anyone could benefit from the experience and availability of these individuals.

While one countywide special response rescue unit such as this should be supported immediately, a second may be appropriate within the next 2-3 years.

3.2.3. EMS District Boundaries

Figure E-2

Proposed EMS Districts
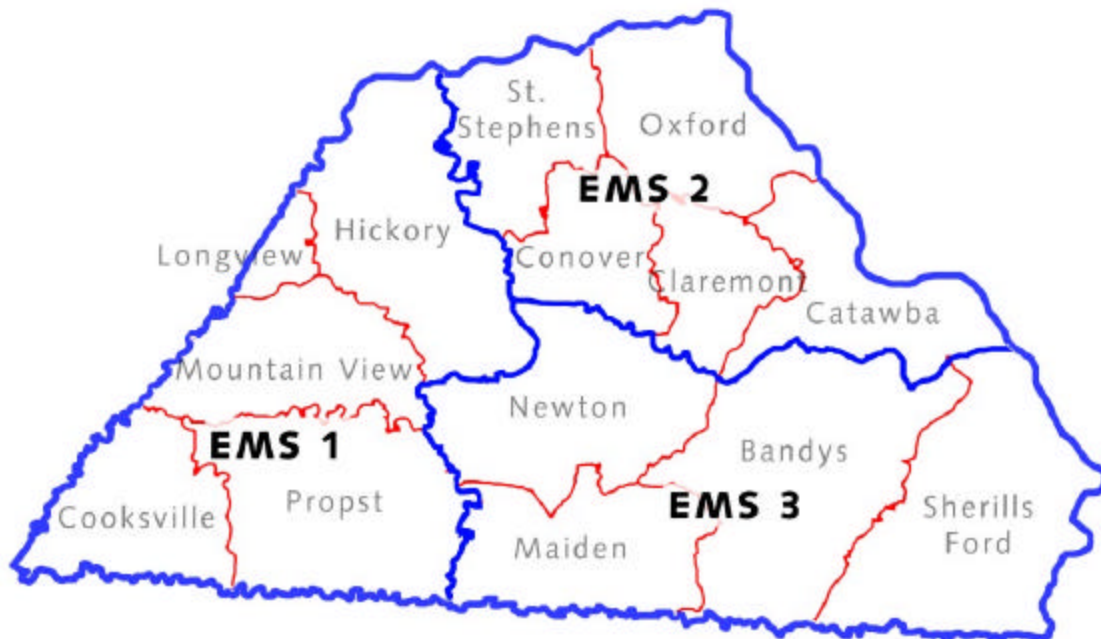
Organization and functions are to remain unchanged. Boundaries to coincide as indicated to simplify deployment and sharing of resources. Additional facilities to be provided per Section 2. "Summary Recommendations". In addition, thought may be given to "floating crews" which may be utilized at busy times (the lake area on holidays) or at/from areas of heavy need.

3.3. Consolidation of Services Currently Provided

This issue impacts Rescue and Fire services as they are currently provided. The recommendation is that all municipal and municipal service level fire departments commence providing basic rescue services. This is to include first response and basic first aid. The reasons are as follows:

- Recruiting and retaining volunteers is becoming more and more difficult.
- Providing adequate response (personnel and time) is dependent on availability, which, during daytime business hours is becoming more and more difficult for volunteers.
- All municipal and municipal service-level fire departments have at least one paid employee on duty during daytime business hours.
- There will be (at least) 14 fire districts, 10 of which will provide municipal level services, and can respond faster than (now) six rescue districts, *with* the necessary equipment and personnel.
- The rural service-level rescue districts will provide primary first response.

3.4 Implementation Issues & Schedule

3.4.1. Service District Boundaries
In 1973 the North Carolina General Assembly, in an effort to make municipal types of services more available to county residents, enacted the County Service District Act (G.S. Chapter 153A, Article 16). This act permits the establishment of districts for fire protection, as well as for certain other designated purposes, without a popular vote.

The County may chose not to realign Fire district boundaries at all and simply re-write local ordinances consolidating and realigning the Rescue and EMS district boundaries.

Should the County chose to, however, the precedent exists and the legal authority is available to establish "service districts" as appropriate and required to provide fire and rescue services in a more streamlined, efficient manner.

3.4.2. Dissolution
Existing fire protection law (G.S. 55A-45) addresses the dissolution of a volunteer fire department if that department is a nonprofit corporation. The assets of the nonprofit corporation have to be distributed pursuant to the statute, which states:

1. All liabilities and obligations of the corporation must be satisfied and discharged.
2. Assets held upon condition requiring their return or transfer in the event of dissolution must be conveyed in accordance with such condition.
3. Assets, which were received and held by the corporation for certain purposes (such as fire protection), must be transferred or conveyed to one or more corporations, societies, or organizations engaged in activities substantially similar to those of the dissolving corporation.

All of the above must be accomplished through a "plan of distribution" developed pursuant to G.S. 55A-46. It is addressed here in anticipation of the eventual dissolution of any Fire or Rescue organization. Although the statute addresses Fire services specifically, it is likely that a similar application would apply to the dissolution of a given

Rescue organization as well; particularly in view of fact that the majority of current Rescue Squad assets have been paid for by the County.

3.4.3. Implementation Schedule
The majority of the tasks to be undertaken are included in Table IS-1, *Summary Recommendations-Implementation Schedule.* The most significant of those, in terms of time and potential impact, will be realignment of the service district boundaries.

3.5 Funding Requirements

Fees, capital costs and personnel salaries are estimated and based on spring-summer 2000 dollars. The majority of funds required of the county is in upgrading EMS and providing facilities for an EMS base in Oxford and a garage facility for Emergency Service Department vehicles and equipment.

The cost impact of Fire and Rescue consolidation in all municipal and municipal service level fire districts should be limited to general revenue funding of the three rural rescue districts and perhaps, a portion of the special Rescue Strike Force.

Once fire district boundaries are realigned, the County will be able to establish designated "service districts" and assign tax rates accordingly. The difference will be, however, that now the service district tax rate will include fire **and** rescue.

Table FR-1
Funding Requirements

Service Area	Recommendation	Year & Dollars (in $000's)				
		2000	**2001**	**2002**	**2003**	**2004**
FIRE						
F.1	**Realign District Boundaries**	25	100	25		
F.2	**Establish Service Districts**			50	25	
F.3	**Fire Alarm Ordinance ****					
	Sub-Total	**25**	**100**	**75**	**25**	**0**
RESCUE						
R.1	**Rescue Coordinator**	20	35	35	35	35
R.2	**Divide Hickory Rescue ***					
R.3	**Hickory FD as First Response ****					
R.4	**Newton FD as First Response ****					
R.5	**Realign District Boundaries***					
R.6	**Establish Rural Base Locations***					
	Sub-Total	**20**	**35**	**35**	**35**	**35**
EMS						
E.1	**Oxford Full-Service Base**	25	350	90	90	90
E.2	**Upgrade Propst to Full-Service**	20	45	45	45	45
E.3	**Upgrade Sherrills Ford to Full-Service**	20	45	45	45	45
E.4	**Hire Operations Officer**	25	50	50	50	50
E.5	**Provide QRV & Personnel in Maiden**	25	45	45	0	0
E.6	**Realign District Boundaries***					
E.7	**Traffic Issues Study @ Hickory & SF**		15			
	Sub-Total	**115**	**550**	**275**	**230**	**230**

Service Area	Recommendation	Year & Dollars (in $000's)				
		2000	2001	2002	2003	2004
COMMUNICATIONS						
C.1	Provide Additional Positions	75	150	300	300	300
C.2	Paygrade/Salary Study **					
C.3	Position Classification Requirements **					
C.4	Cross-Training Program **					
	Sub-Total	75	150	300	300	300
EM. SERVICES						
ES.1	Hire Rescue Coordinator	20	40	40	40	40
ES.2	Department Organization **					
ES.3	Medical Examiner Cases **					
ES.4	Fire Marshal Responsibilities **					
ES.5	Fire Inspector Vehicle		30			
ES.6	Provide Equipment/Vehicle Facility	75	700	200		
	Sub-Total	95	770	240	40	40
COUNTY/OTHER						
CO.1	Steering Committee **					
CO.2	Public Service Announcements		30			
CO.3	ICS System Policy & SOP		15			
CO.4	Hire Certified Ambulance Mechanic	20	40	40	40	40
	Sub-Total	20	85	40	40	40
	Funding Requirement TOTAL:	350	1,690	965	645	645

Notes:
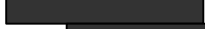
* Indicates Task/Recommendation for which costs/fees are included in Task F.2, Realign District Boundaries.

** Anticipates task(s) can be accomplished in-house, w/existing resources.

The Future:
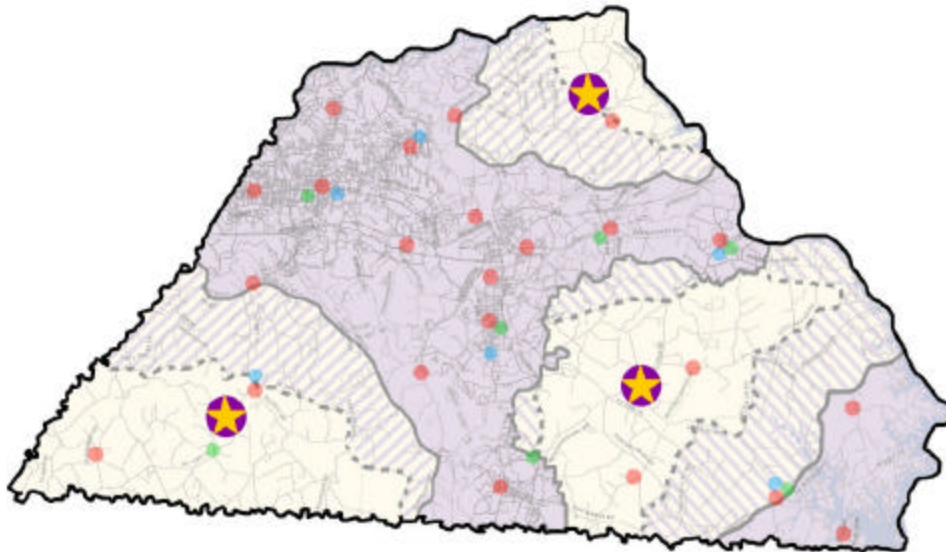
Table IS-1
Summary Recommendations-Implementation Schedule

Service Area	Recommendation	Year			
		2000	2001	2002	2003
FIRE					
F.1	Realign District Boundaries				
F.2	Establish Service Districts				
F.3	Fire Alarm Ordinance				
RESCUE					
R.1	Rescue Coordinator				
R.2	Divide Hickory Rescue				
R.3	Hickory FD as First Response				
R.4	Newton FD as First Response				
R.5	Realign District Boundaries				
R.6	Establish Rural Base Locations				
EMS					
E.1	Oxford Full-Service Base				
E.2	Upgrade Propst to Full-Service				
E.3	Upgrade Sherrills Ford to Full-Service				
E.4	Hire Operations Officer				
E.5	Provide QRV & Personnel in Maiden				
E.6	Realign District Boundsaries				
E.7	Traffic Issues Study @ Hickory & SF				
COMMUNICATIONS					
C.1	Provide Additional Positions				
C.2	Paygrade/Salary study				
C.3	Position Classification & Requirements				
C.4	Cross-Training Program				
EMERGENCY SERVICES					
ES.1	Hire Rescue Coordinator				
ES.2	Department Organization				
ES.3	Medical Examiner Cases				
ES.4	Fire Marshal Responsibilities				
ES.5	Fire Inspector Vehicle				
ES.6	Provide Equipment/Vehicle Facility				
COUNTY/OTHER					
CO.1	Steering Committee				
CO.2	Public Service Announcements				
CO.3	ICS System Policy & SOP				
CO.4	Hire Certified Ambulance Mechanic				

APPENDIX

TABLES

FIGURES